N484h
v.19
pt.2

NEW YORK STATE BRIDGE AND TUNNEL COMMISSION

AND

NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT NO. 19

ELECTRICAL EQUIPMENT

NEW YORK NEW JERSEY

CONTRACT DRAWINGS 1 to 28

1926

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NEW YORK STATE BRIDGE AND TUNNEL COMMISSION

AND

NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT NO. 19

ELECTRICAL EQUIPMENT

NEW YORK NEW JERSEY

CONTRACT DRAWINGS 1 to 28

1926

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N484R
v.19
pt.2

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NEW YORK STATE BRIDGE AND TUNNEL COMMISSION

AND

NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION

NEW YORK STATE BRIDGE AND TUNNEL COMMISSION

GEORGE R. DYER, Chairman

E. W. BLOOMINGDALE, Vice-Chairman

McDOUGALL HAWKES

A. J. SHAMBERG

ALBERT GOLDMAN
Commissioner of Plant and Structures of New York City

ROY G. FINCH
State Engineer and Surveyor

PAUL WINDELS, Counsel

MORRIS M. FROHLICH, Secretary

NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION

THEODORE BOETTGER, Chairman

JOHN B. KATES, Vice-Chairman

THOMAS J. S. BARLOW

JOHN F. BOYLE

ISAAC FERRIS

WELLER H. NOYES

ROBERT S. SINCLAIR

FRANK L. SUPLEE

ROBERT CAREY, Counsel

E. MORGAN BARRADALE, Secretary

OLE SINGSTAD
Chief Engineer

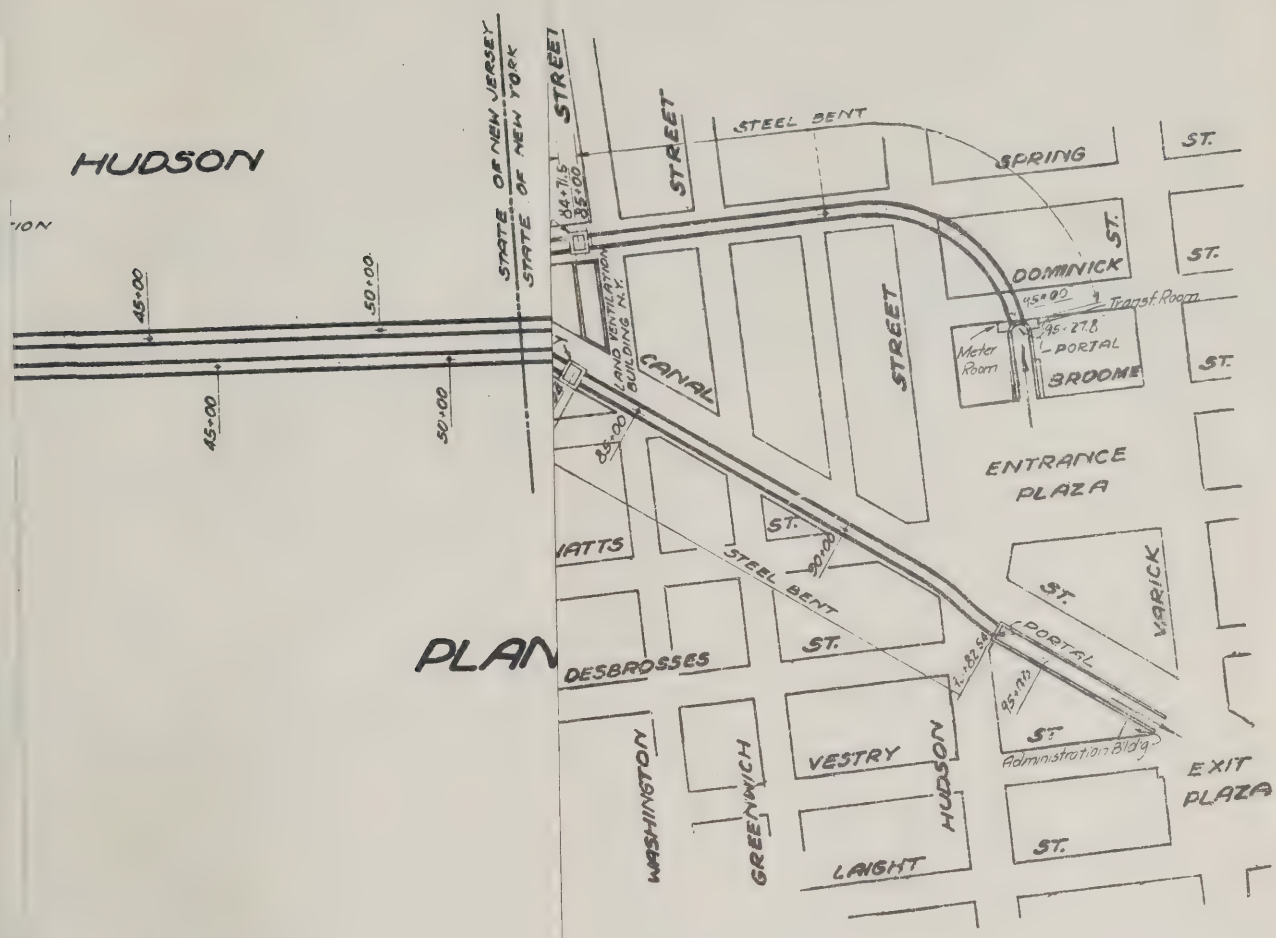
25 mr 49 g.a.c. Wiellands

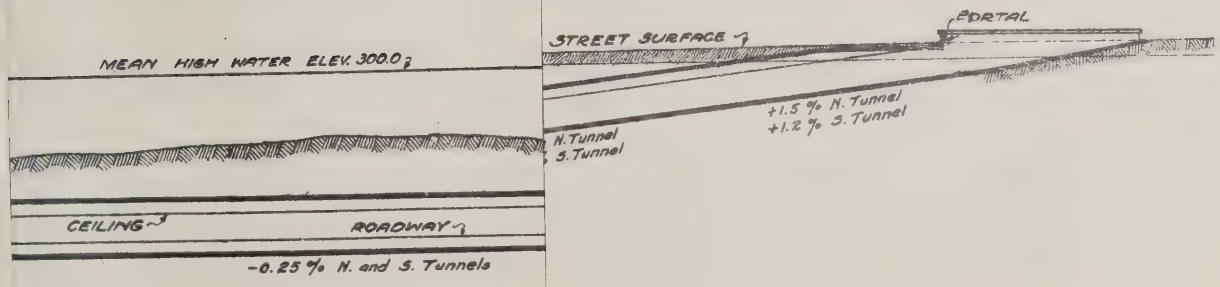
M. B. Brown Printing & Binding Co.,
37-41 Chambers St., N. Y.

LIST OF CONTRACT DRAWINGS

Contract No. 19

1. Plan and Profile.
2. Lighting and Equipment, North Tunnel.
3. Lighting and Equipment, South Tunnel.
4. Location Plan for Substation, Land Ventilation Building, New York.
5. Location Plan for Substation, Land Ventilation Building, New Jersey.
6. Location Plan for Substation, River Ventilation Building, New York.
7. Location Plan for Substation, River Ventilation Building, New Jersey.
8. Control and Relay Cabinets, Land Ventilation Buildings.
9. Control and Relay Cabinets, River Ventilation Buildings.
10. Supervisory Cabinets.
11. 220 Volt Switchboards, Land and River Ventilation Buildings.
12. 440 Volt Truck Type Oil Switch Installation, Land Ventilating Buildings.
13. Air Blast Transformer Installation, Land Ventilation Building, New York.
14. Air Blast Transformer Installation, Land Ventilation Building, New Jersey.
15. Power and Lighting Transformer Installation, Land and River Ventilation Buildings, New York.
16. Power and Lighting Transformer Installation, Land and River Ventilation Buildings, New Jersey.
17. Transformers and Equipment, North Portal, New York.
18. Transformers and Equipment, Administration Building, New Jersey.
19. Control Cabinets for Lighting Feeders.
20. Local Control Box for Fan Motors.
21. Installation of Supervisory Relays and Telephone Cable Terminals.
22. Reflector for Tunnel Light Box.
23. Boxes for Tunnel Traffic Signals.
24. Existing Relay Box.
25. Lighting and Heating Fixtures.
26. Installation of Equipment in Tunnel Fire Extinguisher Niches.
27. Fire Alarm and Traffic Signal Control Box.
28. Trim for Pull and Panel Board Boxes.





PROFILE

PROFILE

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 1

Ole Singstad
CHIEF ENGINEER

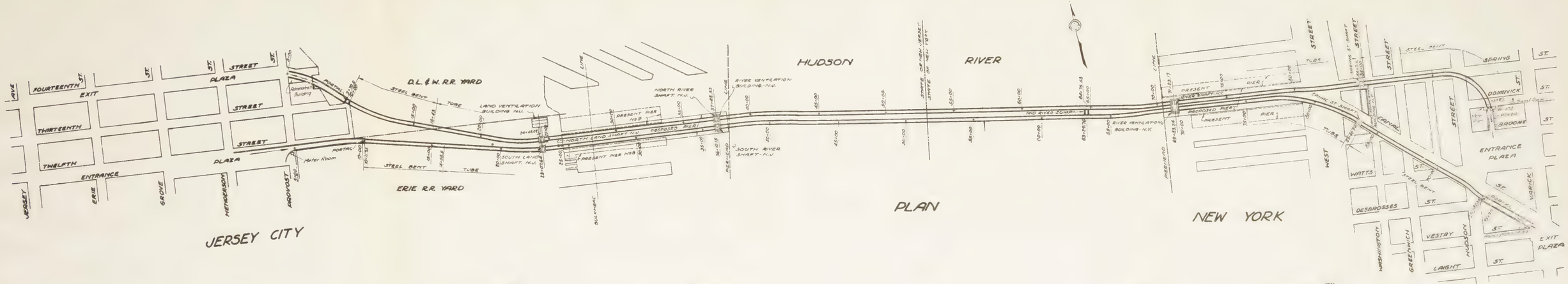
Fitzwell.
ENGINEER

SCALE: HOR. 0 100 200 FEET
VERT. 0 10 20 30 40 50

DATE MAY 18, 1926

FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
27-41 Chambers Street, N. Y.



PLAN AND PROFILE

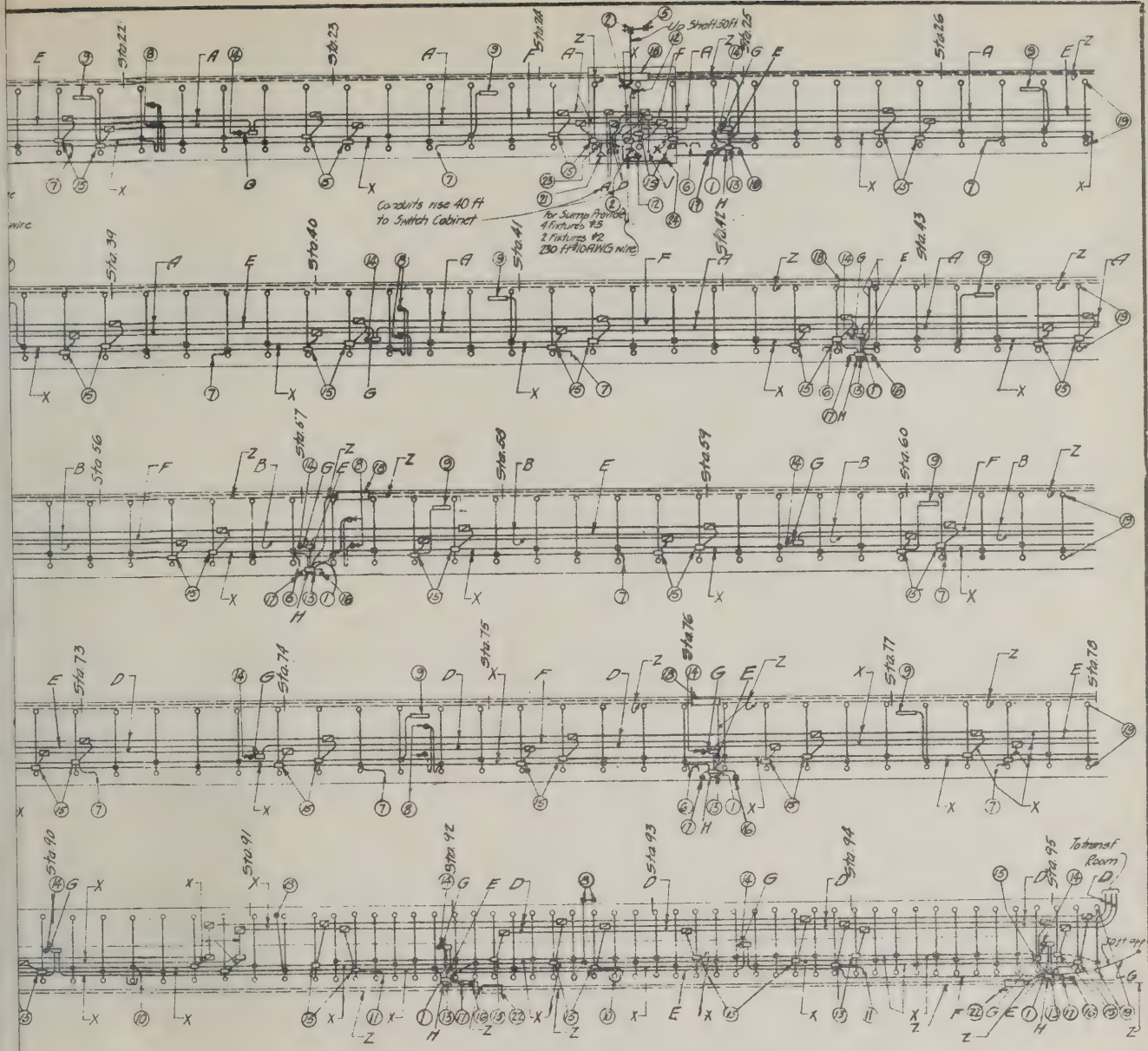
NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No 19
CONTRACT DRAWING No 1

SCALE 100 0 100 200 FEET DATE MAY 8 1924

M. B. Brown Printing & Binding Co.



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 2

F. B. Stillwell
CONSULTING ENGINEER

SCALE. 0 20 40 60 FEET

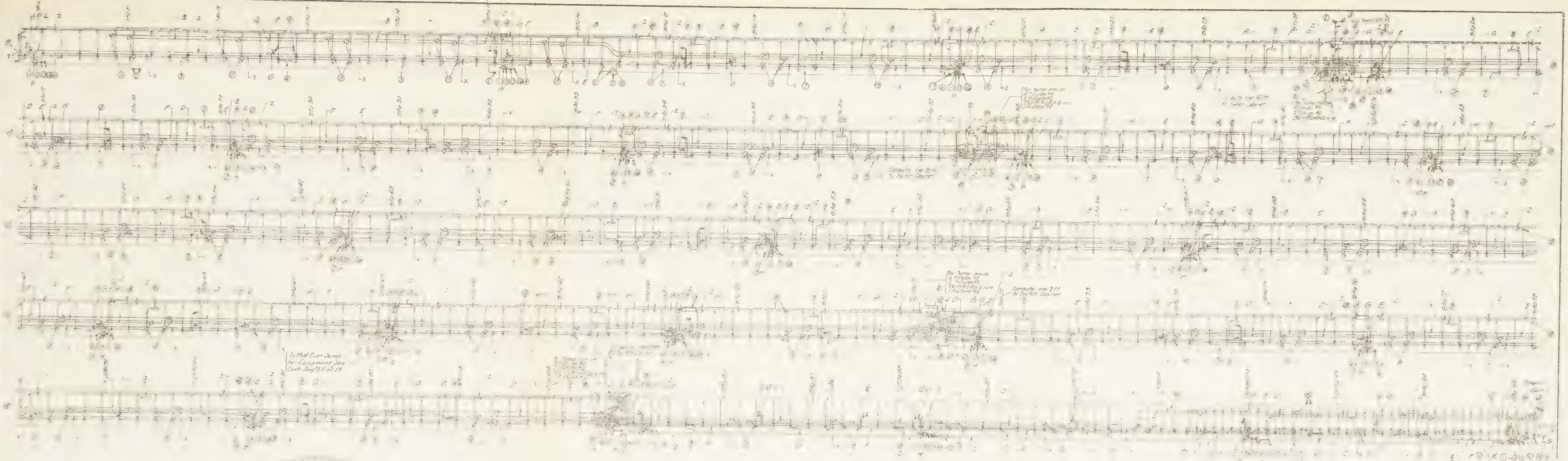
DATE MAY 15, 1926

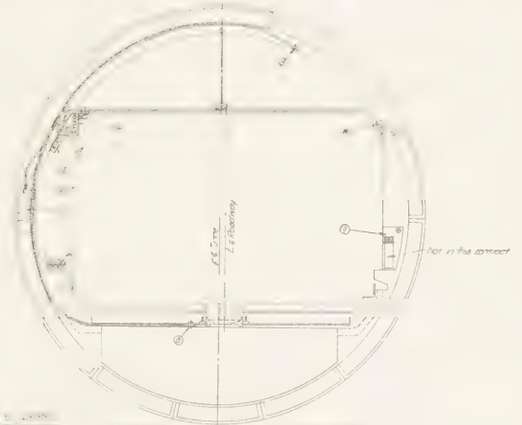
Ole Singstad
CHIEF ENGINEER

FILE NO. H-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

37-41 Chambers Street, N. Y.


To Mid River Sump for Equipment See Contr. Dwg. 3 F of 19
for Sump service 3 Fixtures #2 Receptacle 1 Pedestal
Conduits nos. 211 to Switch Cabinet



TYPICAL CROSS SECTION

LEGEND

1. Existing Pedestal Box	#24	#19	
2. Pull Receptacle	#19	#19	L
3. Type C Single FE Niche Steel Bent Section No.1	#26	#19	
4. Type C Double FE Niche	#26	#19	
5. Lighting Fixture in Sump or Passageway	#26	#19	H
6. Type A Double FE Niche	#26	#19	
7. Type A Single FE Niche	#26	#19	
8. Existing Pull Receptacle	#25	#19	L
9. Type B FE Niche	#26	#19	
10. Type C Double FE Niche Steel Bent Section N.Y.	#26	#19	
" " C Single FE Niche Steel Bent Section N.Y.	#26	#19	
12. Switch for Lighting Fixture in Sump and Shafts	#25	#19	M
13. Traffic Officer's Signal	#25	#19	T
14. Traffic Signal Box	#23	#19	
15. Fused Knife Switch for Branch Lighting Circuits	#25	#19	S
16. Regenerator			
17. Fire Alarm and Traffic Signal Control Box	#27	#19	
18. Existing Emergency Telephone Signaling Chamber			
19. Reflector for Lighting Box	#23	#19	
20. Ceiling Light	#25	#19	CB
21. Exit Light	#25	#19	X
22. Existing Emergency Telephone Signaling Chamber			
23. Exit Light on DC Circuit	#25	#19	P
24. Wall Fixture	#25	#19	F

A 2 #6 and 1 #8 AWG in 2" Iron Conduit
B 2 #1 and 1 #2 AWG in 1½ Iron Conduit
C 3 #1 AWG in 2½ Iron Conduit
D 2 #6 and 1 #8 AWG in 1" Iron Conduit
E 2 #8 and 4 #10 AWG
F 2 #8 AWG
G 4 #10 AWG
H 3 #10 AWG
J 4 #8 AWG

X. No wires to be pulled in conduits marked X.
Z. For wires and cables in conduits marked Z, see specifications.
Conduits bearing no mark are ¾" into which 2 #10 AWG wires are to be installed.

LIGHTING AND EQUIPMENT NORTH TUNNEL

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 2

For List of Symbols and Reference Dwgs, see Dwg #2, File #1-19

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 3

L. B. Stillwell
CONSULTING ENGINEER

SCALE: 0 20 40 60 FEET

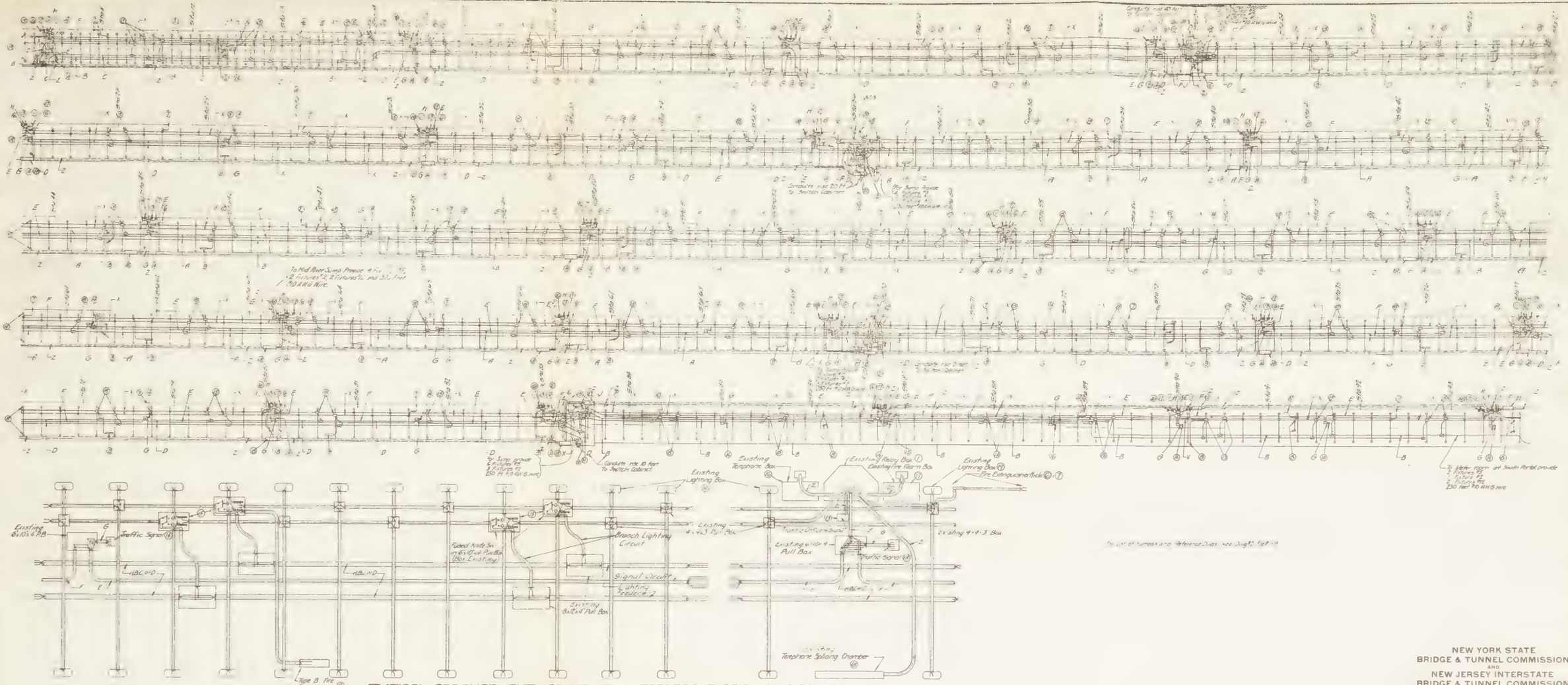
DATE MAY 18, 1926.

Ole Singstad
CHIEF ENGINEER

DRAWN
CHECKED

FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.


Existing 6-10-6 PB
Traffic Signal
Existing Lighting Box
Existing Telephone Box
Existing Relay Box
Existing Fire Alarm Box
Existing Lighting Box
Fire Extinguisher
Existing 4-4-3 Pull Box
Existing 4-10-4 Pull Box
Branch Lighting Circuit
Signal Circuit & Lighting Feeders 2
Existing 8-12-4 Pull Box
Existing Telephone Splicing Chamber
Type B Fire Extinguisher
Conduits rise 10 feet To Switch Cabinet
To Mid-River Sump Pumps 4 Fix. 2 Fixtures 12, 2 Fixtures 15, and 3 Fix. 1 Fixture 12 230 Feet #10 AWG Wire
To Meter room at South Portal provide 3 Fixtures 12, 1 Fixture 12, 2 Fixtures 15 230 feet #10 AWG wire

TYPICAL ARRANGEMENT OF LIGHTING FEEDERS & BRANCH CIRCUITS

Not to Scale

LIGHTING AND EQUIPMENT SOUTH TUNNEL

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 3

L. B. Stillwell
CONSULTING ENGINEER

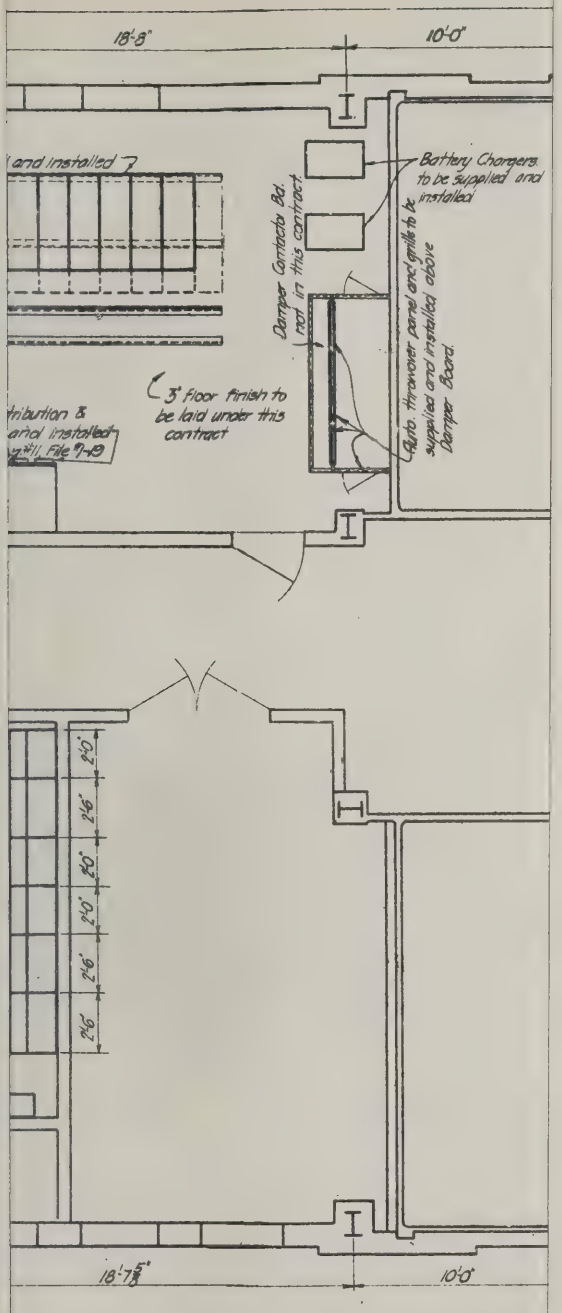
SCALE 0 20 40 60 FEET

DATE MAY 18, 1926

Victor Smith
ENGINEER OF DESIGN

CHIEF ENGINEER

M. B. Brown Printing & Binding Co.



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ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

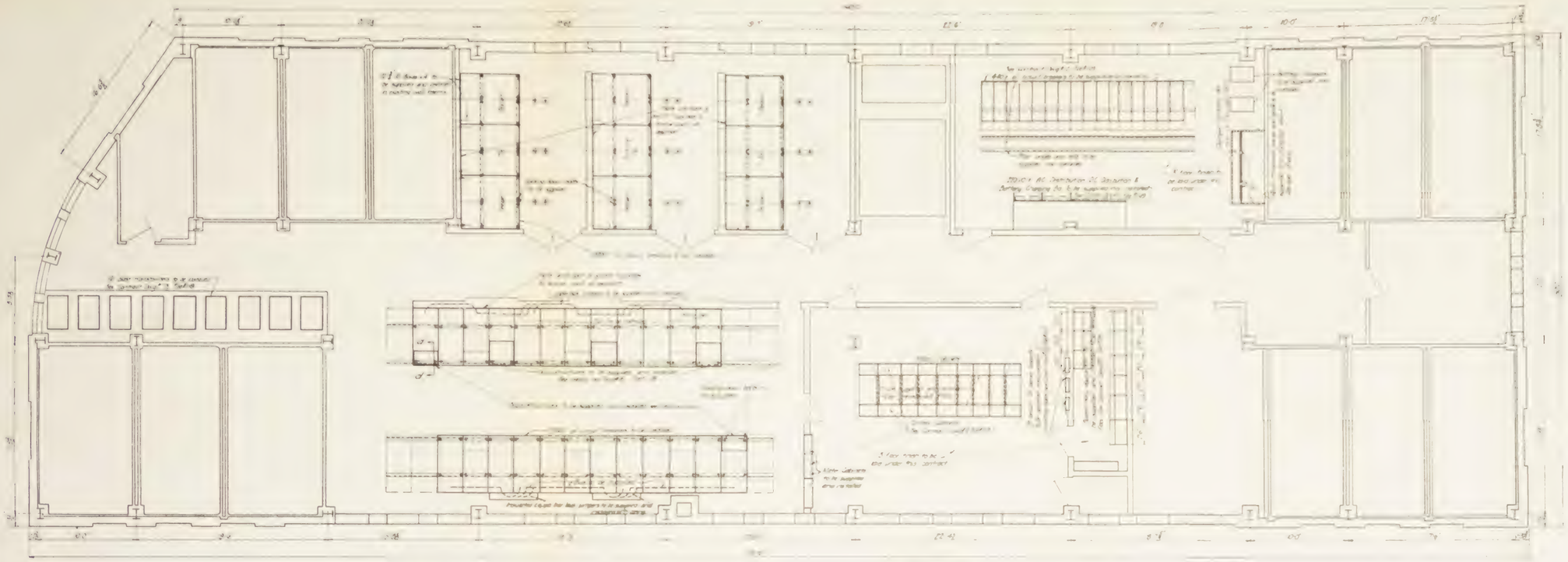
CONTRACT No. 19
CONTRACT DRAWING No. 4

SCALE. 0 1 2 3 4 5 FEET DATE MAY 18, 1926.

Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



FIFTH FLOOR PLAN

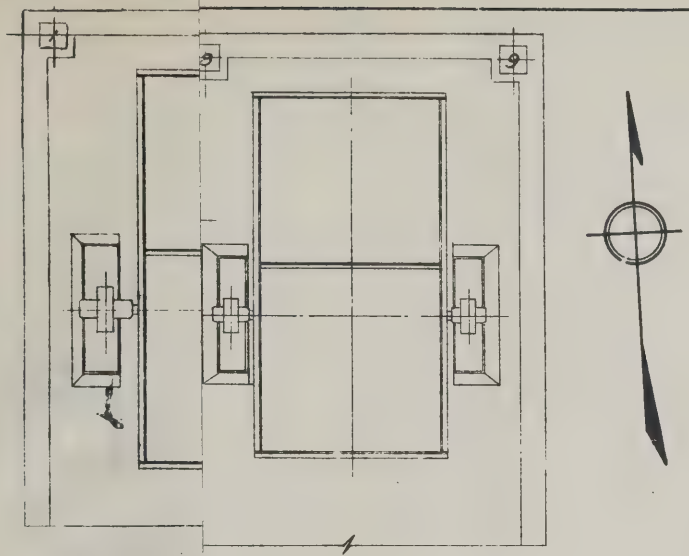
SECTION c-d

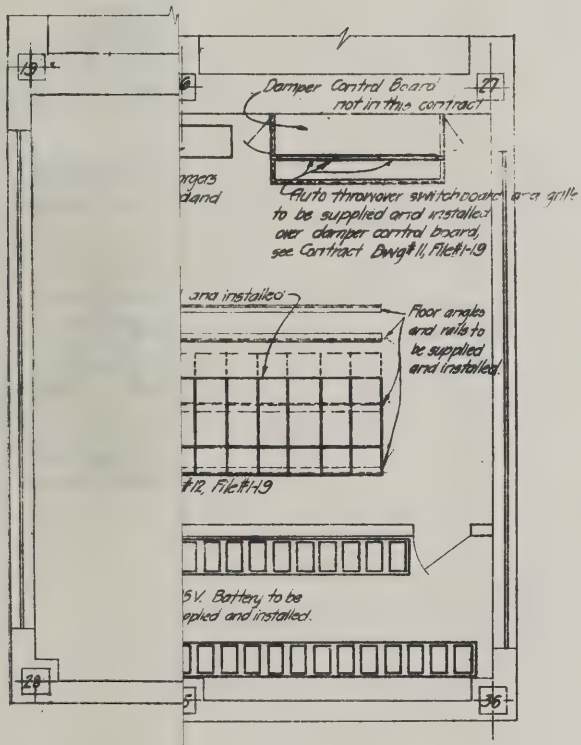
LOCATION PLAN FOR SUB-STATION
LAND VENTILATION BUILDING, NEW YORK

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 4

M. B. Brown Printing & Binding Co.
37-41 Chambers Street, N. Y.




Damper Control Board not in the contract
Auto throwover switchboard to be supplied and installed over damper control board, see Contract Dwg# 11, File#1-19
and installed
Floor angles and rails to be supplied and installed.
#12, File#1-19
V. Battery to be
plied and installed.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 5

L. B. Stillwell
CONSULTING ENGINEER

SCALE: 0 1 2 3 4 FEET

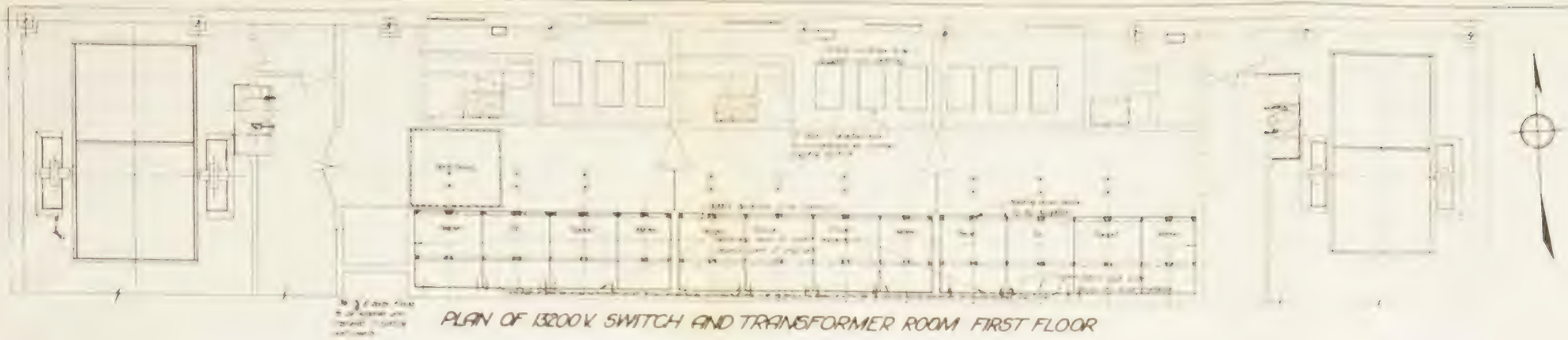
DATE MAY 13, 1926.

Ole Singstad
CHIEF ENGINEER

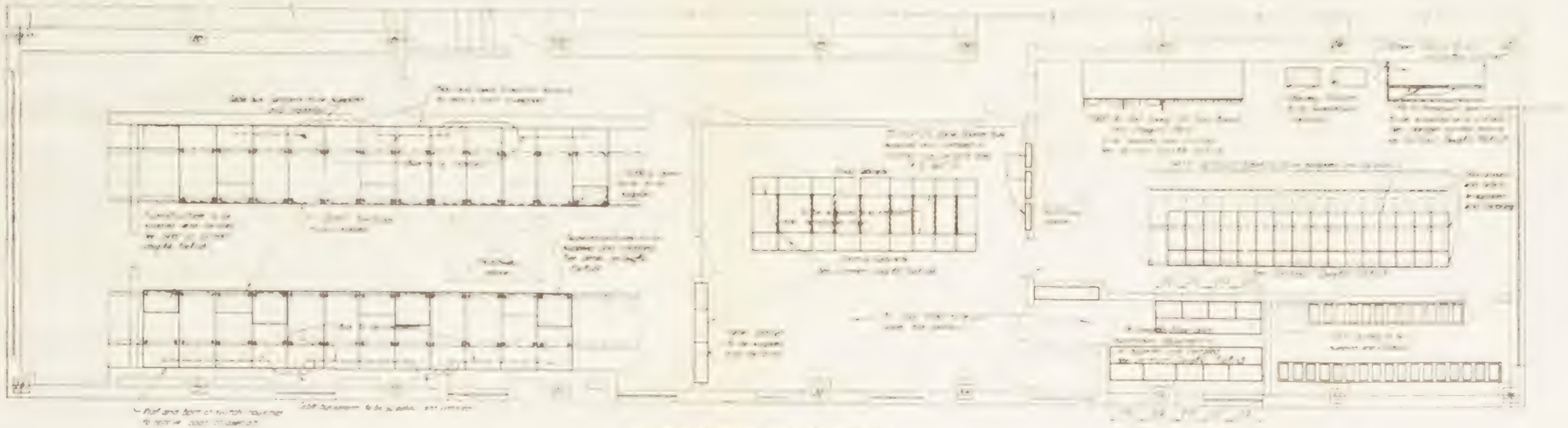
DRAWN BY Kid
CHECKED BY L. P. G.

FILE #

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



PLAN OF 13200 V. SWITCH AND TRANSFORMER ROOM FIRST FLOOR



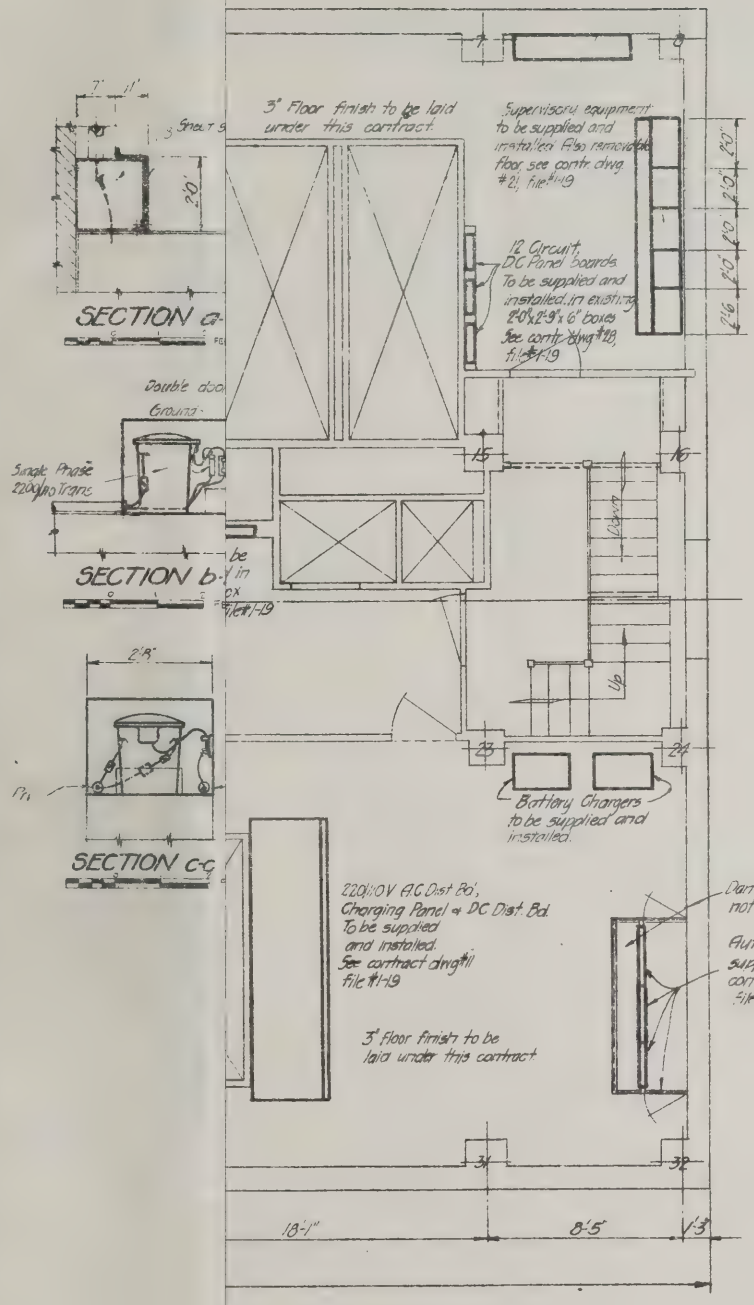
MEZZANINE FLOOR PLAN

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No 19
CONTRACT DRAWING No 5

LOCATION PLAN FOR SUB-STATION
LAND VENTILATION BUILDING, NEW JERSEY

M. B. Brown Printing & Binding Co.


3" Floor finish to be laid under this contract.
Supervisory equipment to be supplied and installed. Also removable floor, see contr. dwg #2, file #1-19
12 Circuit DC Panel Boards To be supplied and installed in existing 2'-0"x2'-9"x6" boxes See contr. dwg #18, file #1-19
SECTION a-
Double door
Ground
Single Phase 220/110 Trans.
SECTION b-
SECTION c-c
Battery Chargers to be supplied and installed.
220/110V AC Dist Bd, Charging Panel & DC Dist. Bd. To be supplied and installed. See contract dwg #11 file #1-19
3" Floor finish to be laid under this contract
Damper control board not in this contract.
Auto throwover switch board and grille to be supplied and installed over damper control board, see contract dwg #11, file #1-19.
18'-1"
8'-5"
1'-3"

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 6

L. B. Stillwell
CONSULTING ENGINEER

SCALE: 0 1 2 3 4 FEET

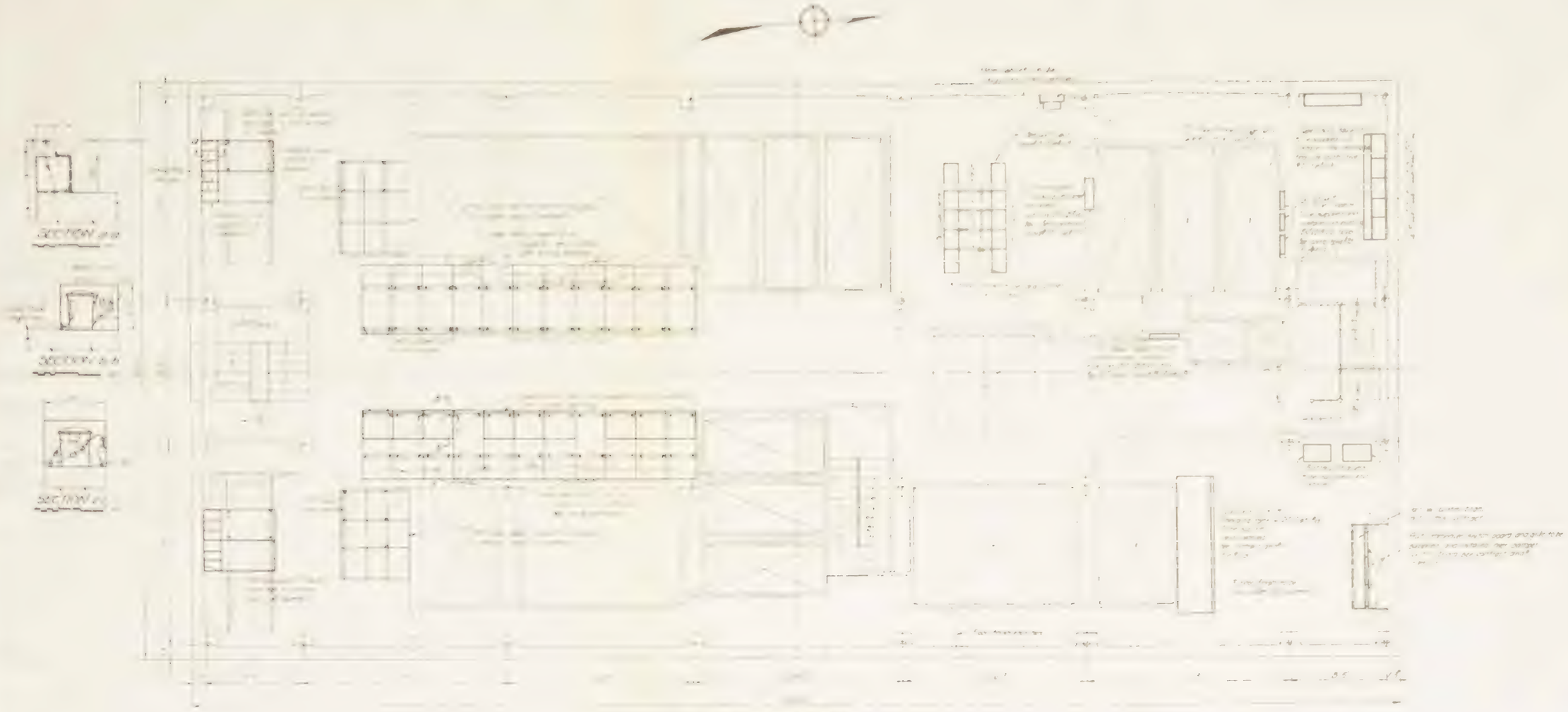
DATE MAY 18, 1926.

Ole Singstad
CHIEF ENGINEER

DRAWN BY
CHECKED BY
ENGINEER

FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



FIRST FLOOR PLAN

LOCATION PLAN FOR SUB-STATION
RIVER VENTILATION BUILDING, NEW YORK

L. B. Stillwell

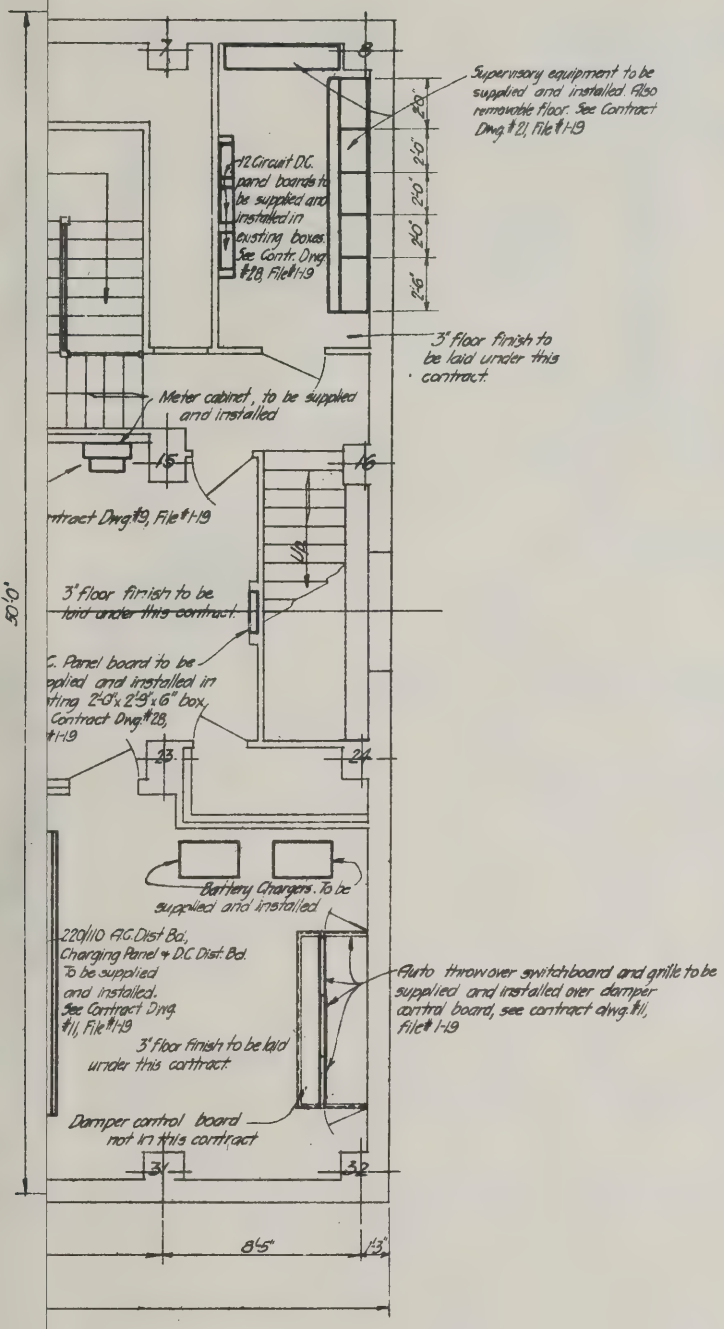
NEW YORK STATE
BRIDGE & TUNNEL COMMISSION

NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 6

Ole Singstad
CHIEF ENGINEER

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.


Supervisory equipment to be supplied and installed. Also removable floor. See Contract Dwg. #21, File #1-19
12 Circuit D.C. panel boards to be supplied and installed in existing boxes. See Contr. Dwg. #28, File #1-19
3" floor finish to be laid under this contract
Meter cabinet, to be supplied and installed
Contract Dwg. #9, File #1-19
3" floor finish to be laid under this contract
D.C. Panel board to be supplied and installed in existing 2'-3" x 2'-9" x 6" box, See Contract Dwg. #28, File #1-19
Battery Chargers. To be supplied and installed
220/110 A.C. Dist. Bd., Charging Panel & D.C. Dist. Bd. To be supplied and installed. See Contract Dwg. #11, File #1-19
3" floor finish to be laid under this contract
Damper control board not in this contract
Auto throwover switchboard and grille to be supplied and installed over damper control board, see contract dwg. #11, File #1-19
50'0"
84'5"

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 7

H. B. Stillwell
CONSULTING ENGINEER

SCALE: 0 1 2 3 4 5 FEET

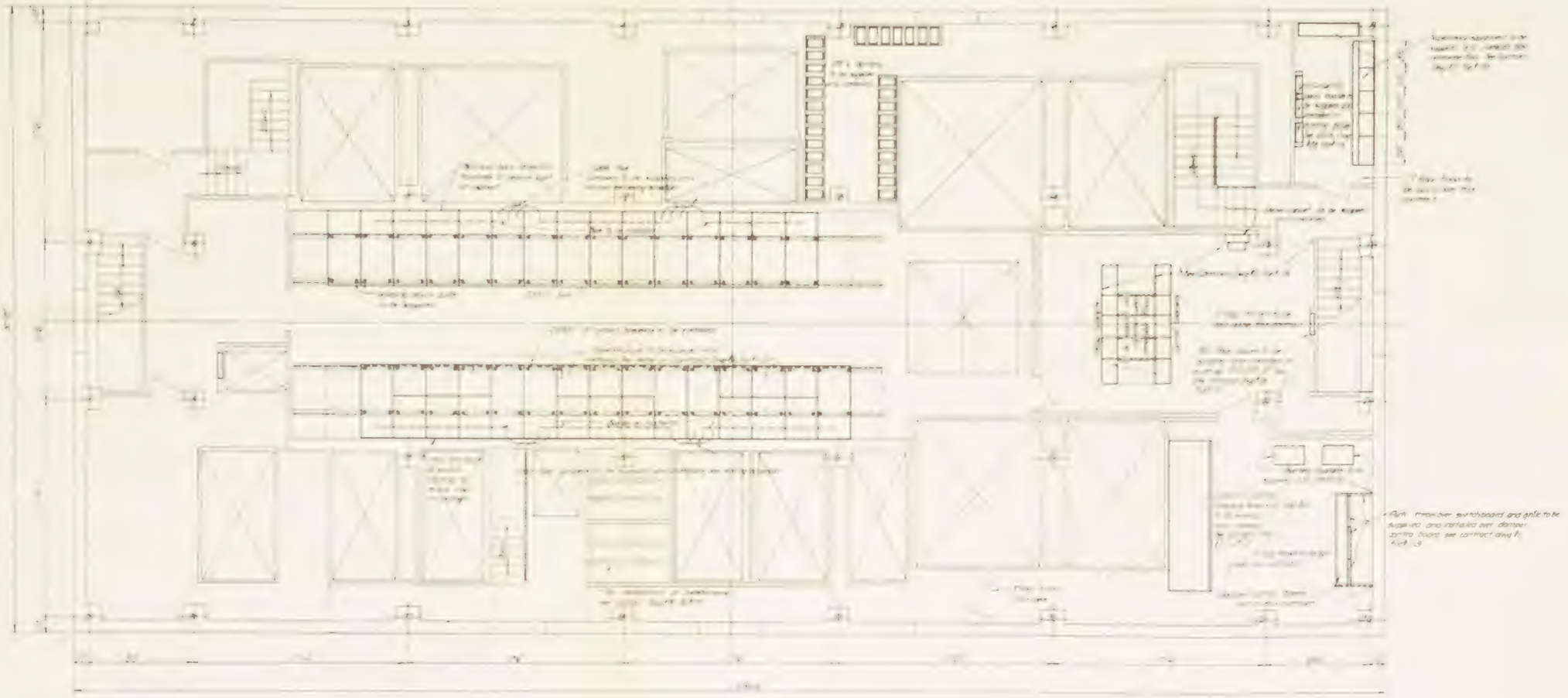
DATE MAY 18, 1926

Ole Singstad
CHIEF ENGINEER

DRAWN BY A.H.
CHECKED BY L.E.

FILE NO 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



FIRST FLOOR PLAN

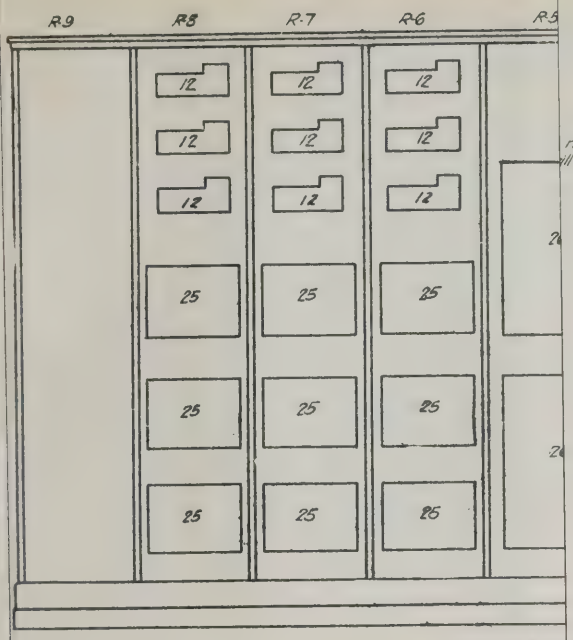
LOCATION PLAN FOR SUB-STATION
RIVER VENTILATION BUILDING, NEW JERSEY

W. B. Stillwell
CHIEF ENGINEER

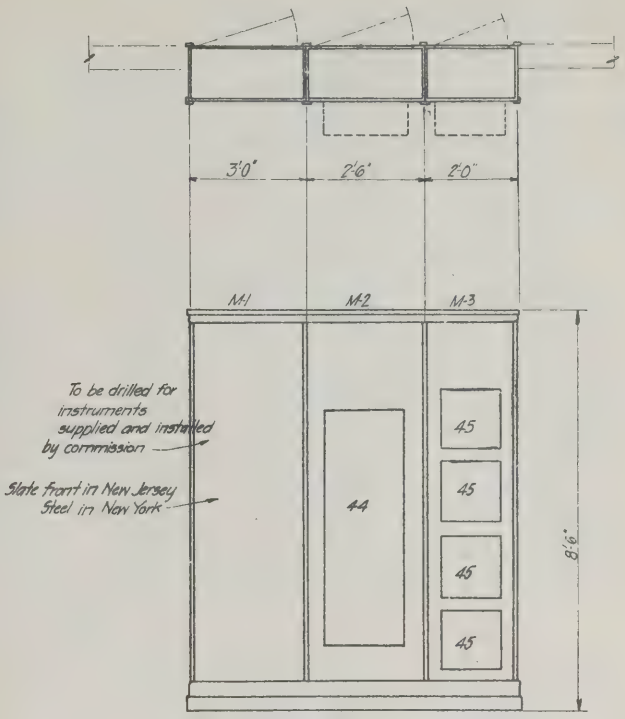
NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 8
CONTRACT DRAWING No 7

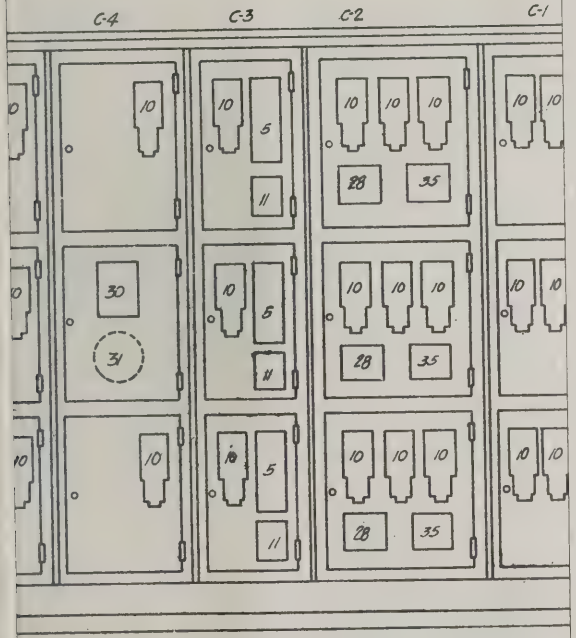
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



ELEVA



METERING CABINETS



TION B-B

Stillwell.
NG ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 8

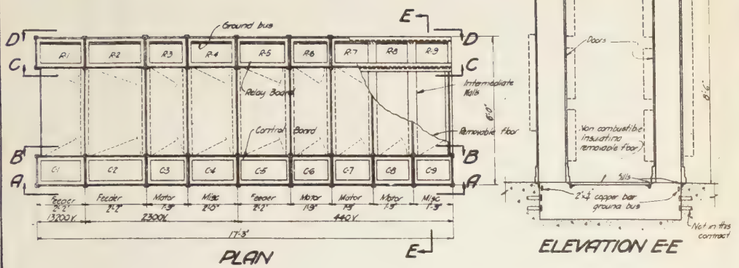
SCALE

DATE MAY 18, 1926.

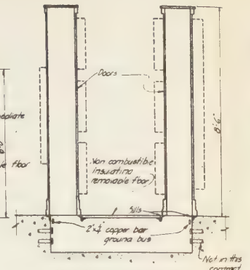
Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

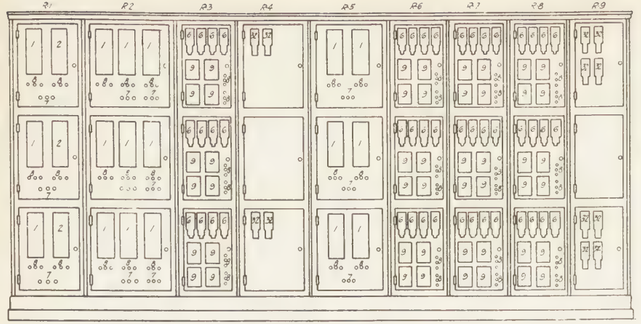
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



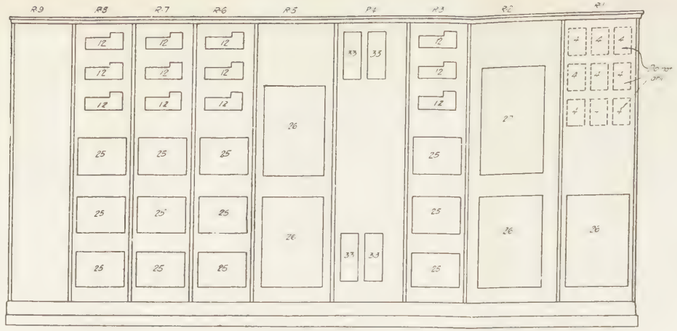
PLAN



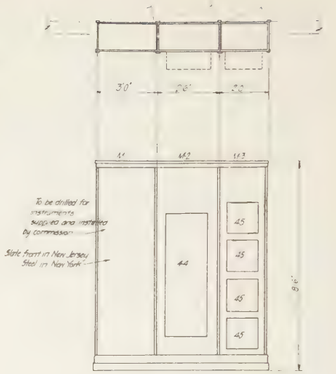
ELEVATION E-E



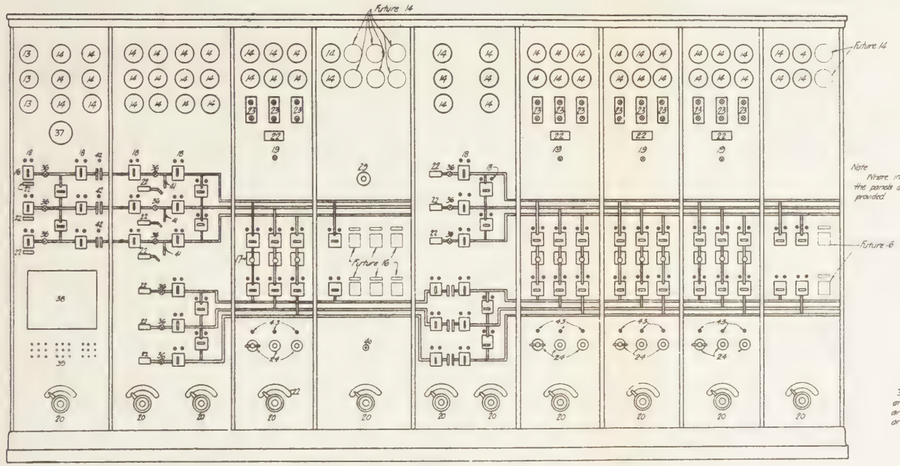
ELEVATION C-C



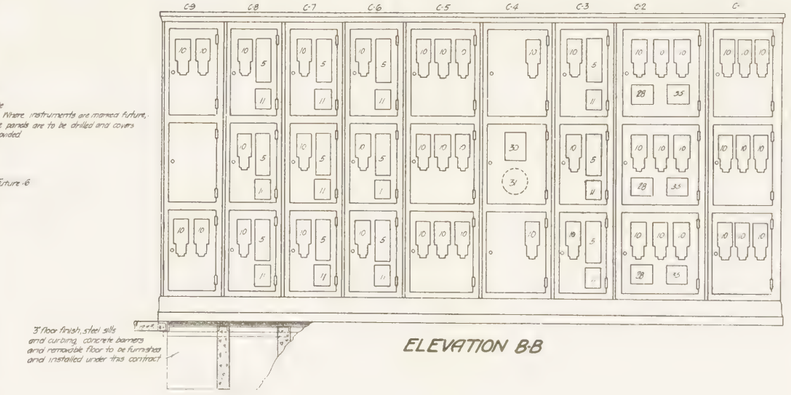
ELEVATION D-D



METERING CABINETS



ELEVATION A-A


3" floor finish, steel sills and curbing, concrete barriers and removable floor to be furnished and installed under this contract

ELEVATION B-B

Item	Instrument
1	Induction Over Current Relay
2	Induction Differential Relay
4	Future Reverse Power Relays
5	Long Time Delay Under Voltage Relay
6	Motor Short Circuit Protective Relay
7	Potential Calibrating Receptacles
8	Current Calibrating Receptacles
9	Motor Overload, Temperature Relay
10	Multi-Contact, Lockout Relay
11	Single Circuit Instantaneous Under Voltage Relay
12	Speed Control Contactor
13	Voltmeter
14	Ammeter
15	
16	Oil Circuit Breaker Control Switch
17	Key Transfer Switch
18	Oil Circuit Breaker Pilot Light
19	Carbon Monoxide Pilot Light
20	Supervisory Control Transfer Switch
21	Engraved Name Plate
23	Motor Pilot Lights
24	Speed Control Switch
25	Two Switch Interlock
26	Five Switch Interlock
27	Eight Switch Interlock
28	Transformer Overload Relay
29	Bell Alarm Reset
30	Bell Alarm Relay
31	Go-no
32	Inverse Time Limit Overload Relay
33	Time Delay Under Voltage Relay
35	Feeder Overload Relay
36	Bus Potential Pilot Lights
37	Temperature Indicator
38	Temperature Indicating Equipment
39	Temperature Indicating Transfer Plug
40	Telephone Plug Receptacle
41	Cable Overload Pilot Light
42	Transformer for Bell Pilot Light
43	Motor Speed Pilot Light
44	Supervisory Instrument Equipment
45	Carbon Monoxide Recorder-Transmitter

CONTROL & RELAY CABINETS LAND VENTILATION BUILDINGS

DRAWN BY
CHECKED BY

CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 8

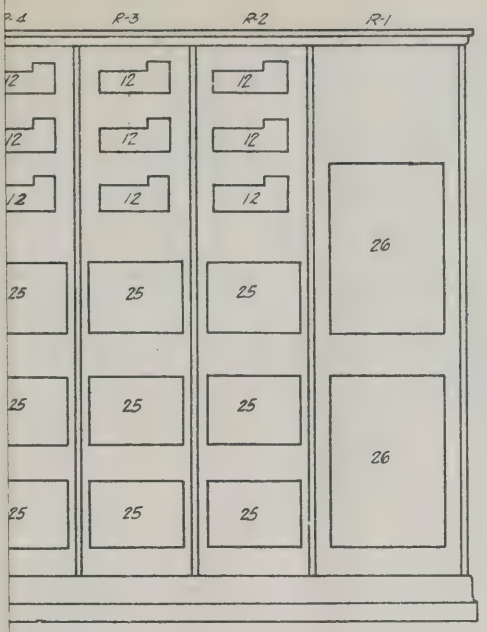
TRACED

DATE MAY 19 1926

CHIEF ENGINEER

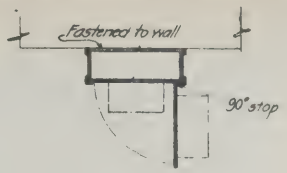
FILE NO. 1-19

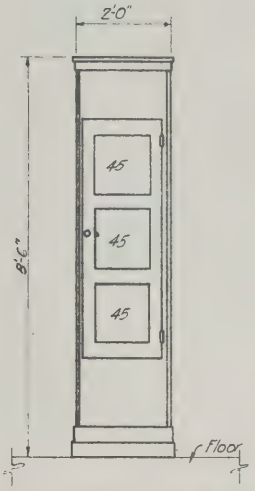
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



LEVATION D-D

rrent Relay
ader-Voltage Relay
Protective Relay.
g Receptacle.
g Receptacle.
mperature Relay
out Relay
taneous Under Voltage Relay.
ctors
ntrol Switch.
lot Light
lot Light.
Transfer Switch.
rte.
h.
k.
Overload Relay.
Lights.
ptacle
ght
orderand Transmitter.





METERING CABINET

Dwg #6+#7, File #1-19

K. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 9

SCALE: N.T.S.

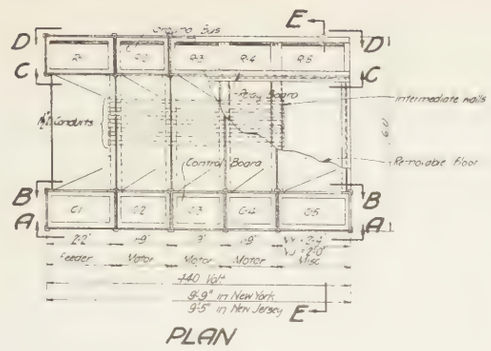
DATE MAY 18, 1926

Ole Singstad
CHIEF ENGINEER

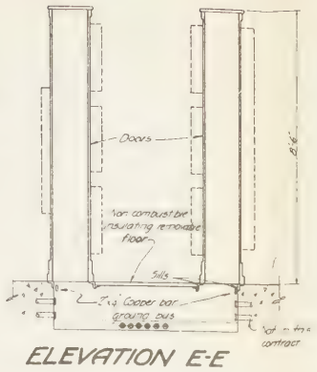
DRAWN BY
CHECKED BY

FILE NO. 1-19

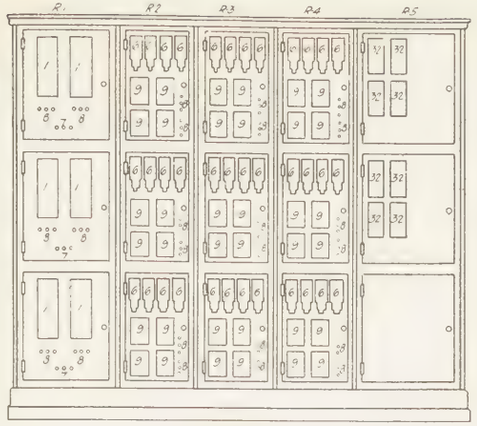
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



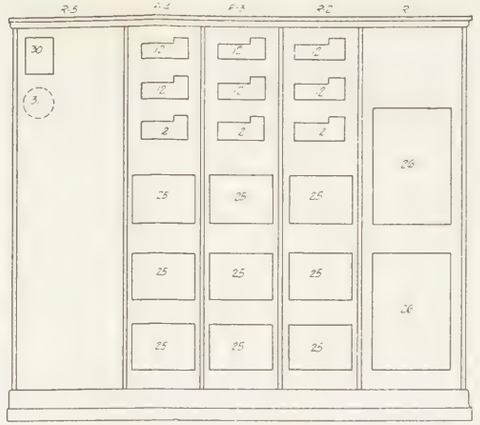
PLAN



ELEVATION E-E

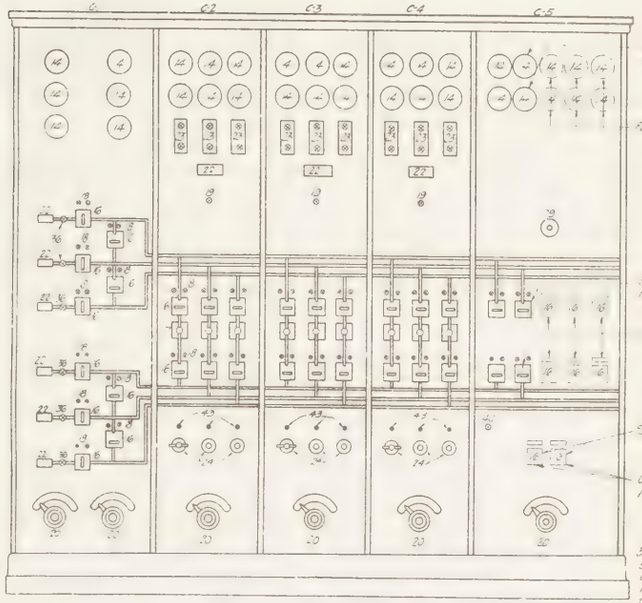


ELEVATION C-C



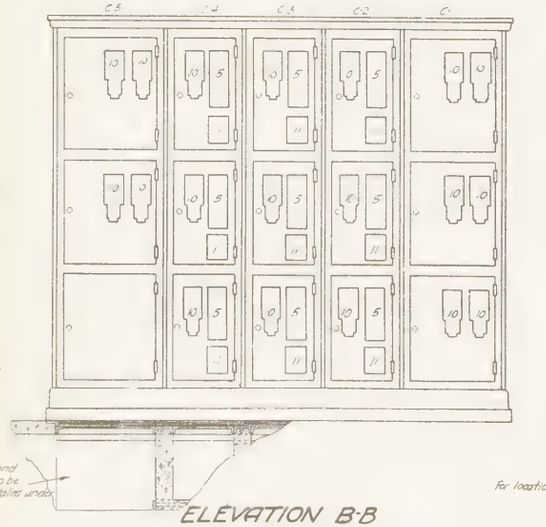
ELEVATION D-D

METERING CABINET


Omit for New Jersey Panel
Future
Omit for New York Panel
Future
Future
Omit drilling for New York Panel
3" floor finish steel sills and curbing, concrete barriers and removable floor to be furnished and installed under this contract

ELEVATION A-A

Note. Where instruments are marked future, the panels are to be drilled and covers provided.



ELEVATION B-B

Mark	Instrument
1	Induction Over Current Relay
5	Long Time Delay Under-Voltage Relay
6	Motor Short-Circuit Protective Relay
7	Potential Calibrating Receptacle
8	Current Calibrating Receptacle
9	Motor Overload Temperature Relay
10	Multi-Contact Lockout Relay
[illegible]	Single Circuit Instantaneous Under Voltage Relay
3	Watt Hour Meter
4	Ammeter
6	Oil Circuit Breaker Control Switch
[illegible]	Key Transfer Switch
8	Oil Circuit Breaker Pilot Light
11	Carbon Monoxide Pilot Light
20	Supervisory Control Transfer Switch
22	Engraved Name Plate
23	Motor Pilot Lights
24	Speed Control Switch
25	Two Switch Interlock
26	Five Switch Interlock
29	Bell Alarm Reset
30	[illegible] Relay
2	Gong
32	Inverse Time [illegible] Relay
40	Blue Indicating Light [illegible]
42	Telephone Plug Receptacle
43	Motor Speed Pilot Light
45	Carbon [illegible] Recording Thermometer

For location of these cabinets, see Contract Drawing No. 17, Sheet 3

CONTROL & RELAY CABINETS
RIVER VENTILATION BUILDINGS

K. B. Stillings CE
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 9

SCALE N.T.S.

DATE MAY 18 1926

O. H. Ingstad
CHIEF ENGINEER

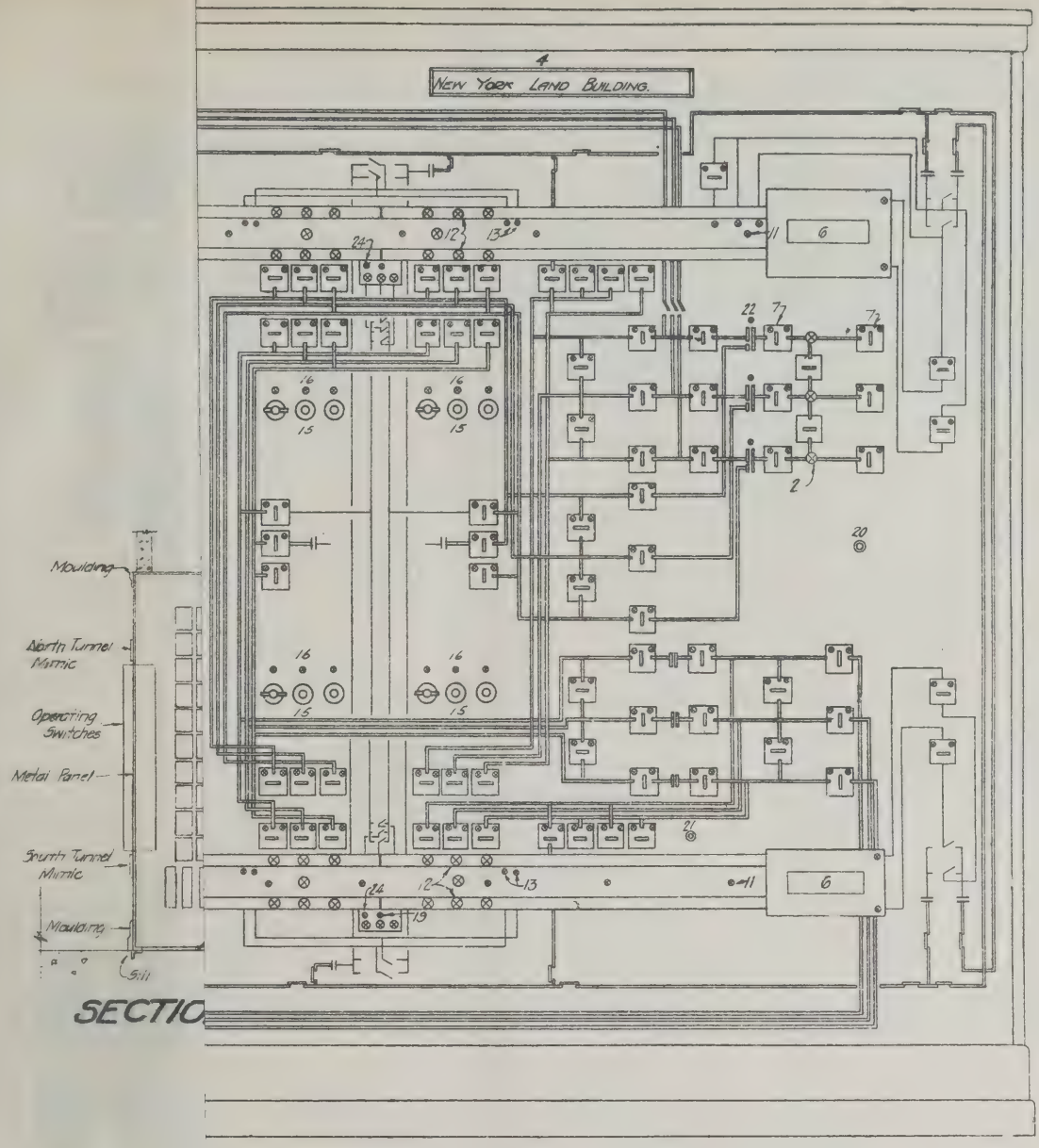
FILE NO. 11-6-4

DRAWN BY [illegible]
TRACED BY [illegible]
CHECKED BY [illegible]

Joseph Strauss
ENGINEER OF DESIGN

J. N. Todd
ELECTRICAL ENGINEER

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



LEGEND

1	Clock
2	Bus Potential Pilot Light.
3	Terminal Blocks.
4	Name Plate
5	Tunnel Mimic.
6	Name Plate.
7	Operating Switch.
8	Load Recorder
9	Bus Mimic
10	Stop Engine Luminous Sign
11	Fire Pilot Light
12	Motor Pilot Light
13	Tunnel Lightting Pilot Light
14	Pump Pilot Light
15	Speed Switch
16	Speed Pilot Light
17	Carbon Monoxide Alarm Light.
18	Supervisory Relay.
19	Water Level Pilot Light.
20	Bell Alarm Reset Button
21	Telephone Plug Receptacle
22	Transformer Air Pilot Light.
23	Carbon Monoxide Recorder.
24	Sump Fire Light.

K. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 10

SCALE: 0 1 FEET
EXCEPT AS SHOWN

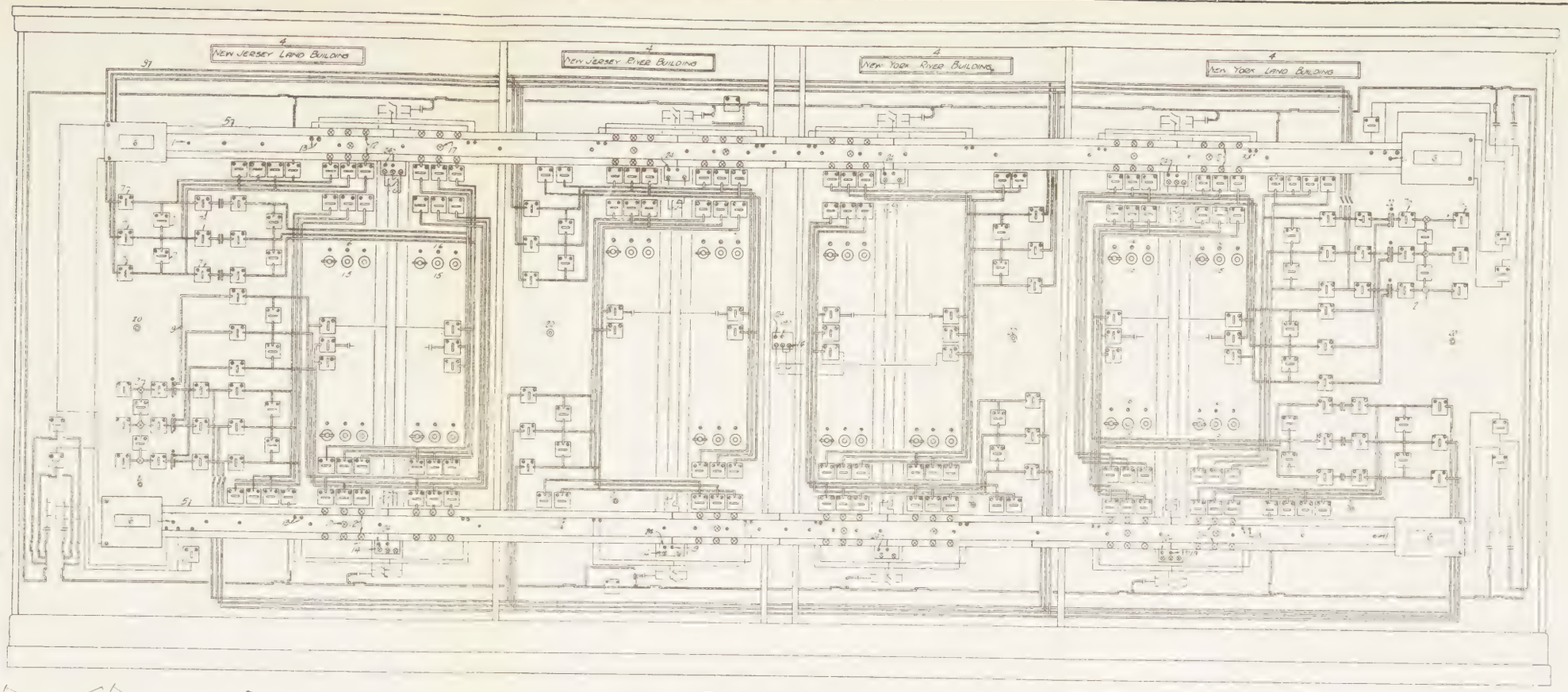
DATE MAY 15, 1926.

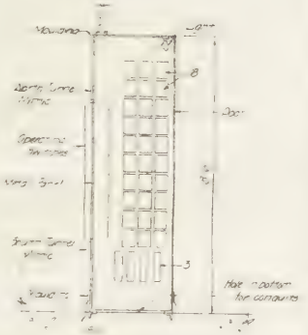
Ole Singstad
CHIEF ENGINEER

DRAWN BY [illegible]
CHECKED BY [illegible]

FILE NO. -19

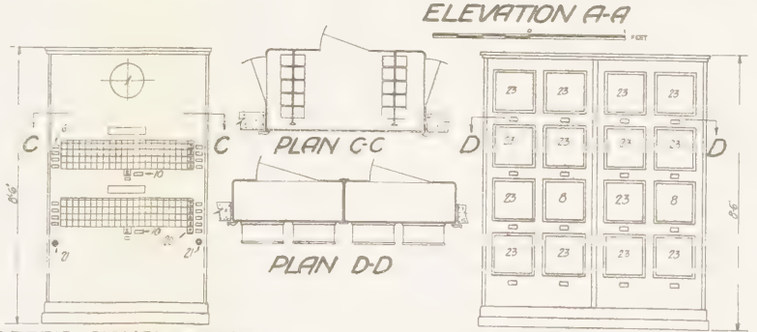
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.





SECTION B-B

PLAN



ELEVATION A-A

TRAFFIC SIGNAL CABINET

PLAN C-C

PLAN D-D

METERING CABINET

LEGEND	
1	Clock
2	Bus Potential Pilot Light
3	Terminal Blocks
4	Name Plate
5	Tunnel Mimic
6	Name Plate
7	Reversing Switch
8	Loop Recorder
9	Bus Mimic
10	Stop Engine Luminous Sign
11	Fire Pilot Light
12	Motor Pilot Light
13	Tunnel Lighting Pilot Light
14	Pump Pilot Light
15	Speed Switch
16	Speed Pilot Light
17	Carbon Monoxide Alarm Light
18	Hypersensor Relay
19	Water Level Pilot Light
20	Bell Alarm Reset Button
21	Telephone Plug Receptacle
22	Transformer Air Pilot Light
23	Carbon Monoxide Recorder
24	Sump Pump Light

K. B. Stillwell
CONSULTING ENGINEER

SUPERVISORY CABINETS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 10

SCALE — FEET
EXCEPT AS NOTED

DATE

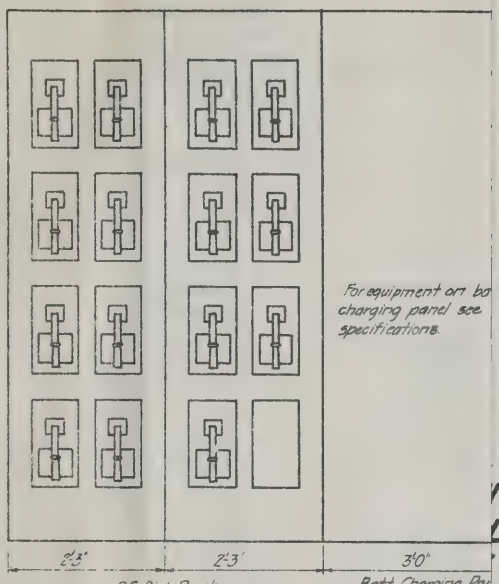
Ole Singstad
CHIEF ENGINEER

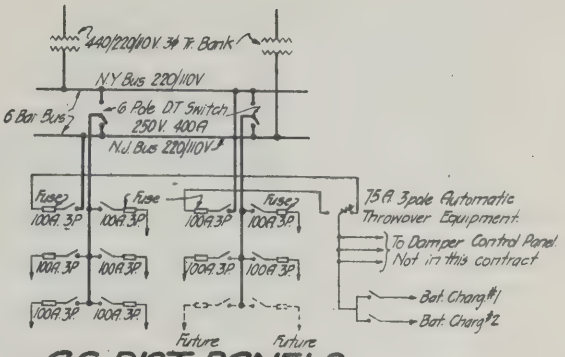
DRWN. BY
CHECKED BY

J. N. Bonfil
ELECTRICAL ENGINEER

CHIEF OF DESIGN

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

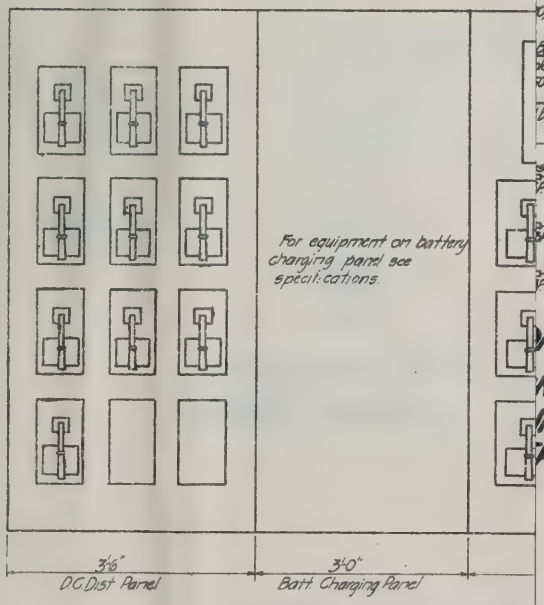


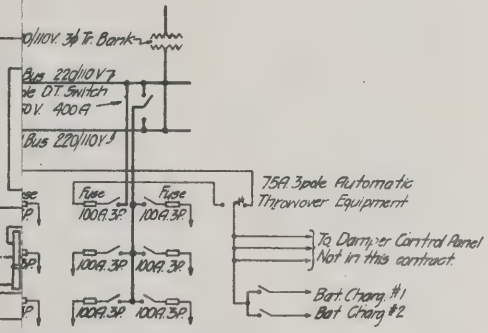


A.C. DIST. PANELS

NE DIAGRAM
LATION BUILDINGS
& NEW JERSEY

LAND VENTILAT
NEW YORK &





VST. PANELS

M
ILDINGS
RSEY

RIVER VENTILATI
NEW YORK & N

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 11

SCALE: 0 FEET

DATE MAY 18, 1926.

J. N. Dodd
ELECTRICAL ENGINEER

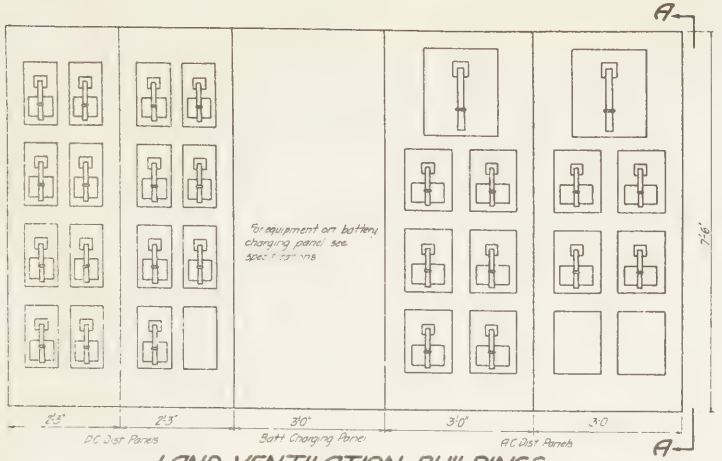
Ole Singstad
CHIEF ENGINEER

DRAWN BY L. Reid
CHECKED BY C.C.

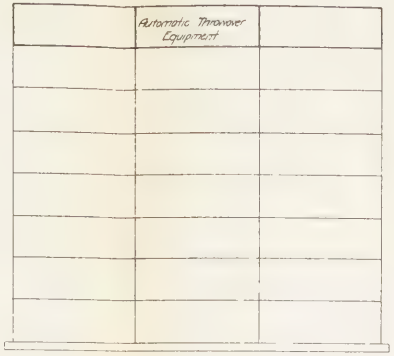
ENGINEER OF DESIGNS

FILE NO. H-19

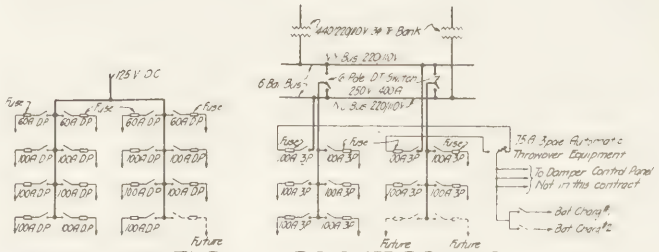
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



LAND VENTILATION BUILDINGS
NEW YORK & NEW JERSEY

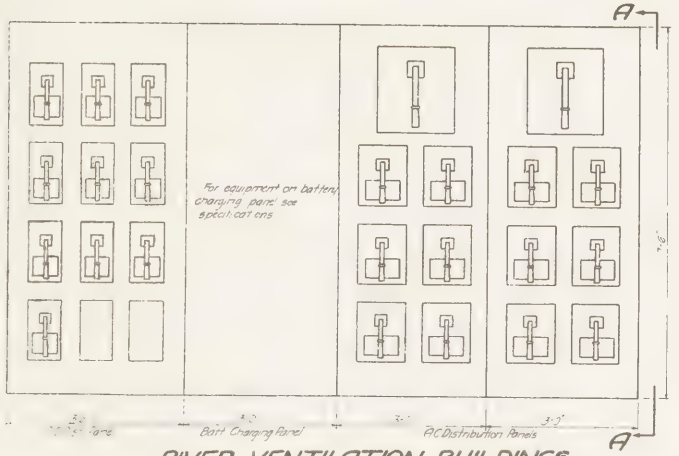


DAMPER CONTROL BOARD

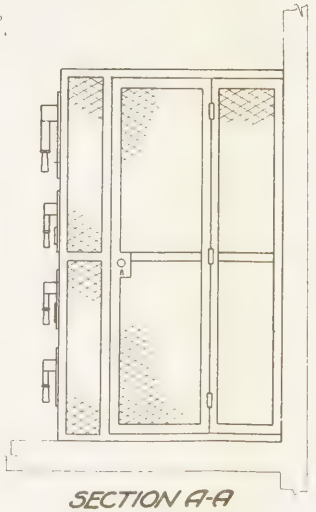


D.C. DIST. PANELS A.C. DIST. PANELS

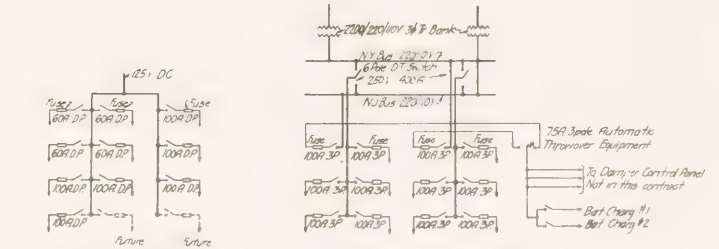
ONE LINE DIAGRAM
LAND VENTILATION BUILDINGS
NEW YORK & NEW JERSEY



RIVER VENTILATION BUILDINGS
NEW YORK & NEW JERSEY



SECTION A-A



D.C. DIST PANELS A.C. DIST. PANELS

ONE LINE DIAGRAM
RIVER VENTILATION BUILDINGS
NEW YORK & NEW JERSEY

For Location, see Contract Dngs #4, 5, 6 & 7, File # 19

220 VOLT SWITCHBOARDS
LAND & RIVER VENTILATION BUILDINGS

L. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 11

SCALE: 0 FEET DATE MAY 10, 1926

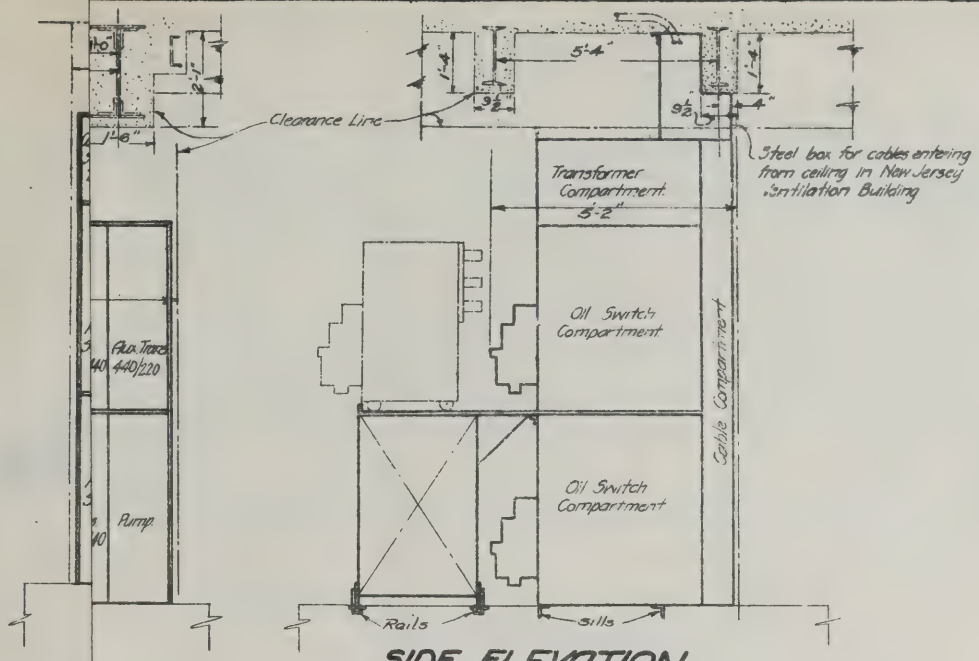
Ole Singstad
CHIEF ENGINEER

FILE NO. H-19

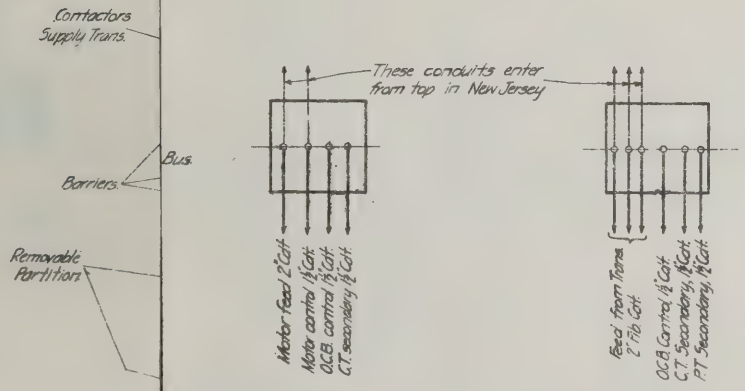
J. N. Dodd
ELECTRICAL ENGINEER

DRAWN BY
CHECKED BY

M. B. Brown Printing & Binding Co.,



SIDE ELEVATION



CONDUITS AT MOTOR SWITCH

CONDUITS AT TRANSFORMER SWITCH

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 12

K. B. Stillwell
CONSULTING ENGINEER

SCALE: 0 1 2 FEET
EXCEPT AS SHOWN

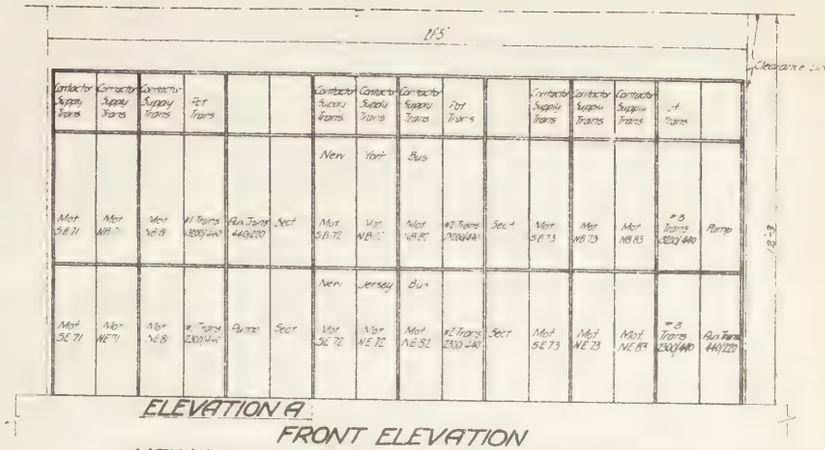
DATE MAY 18, 1926.

Ole Singstad
CHIEF ENGINEER

DRAWN BY
CHECKED BY

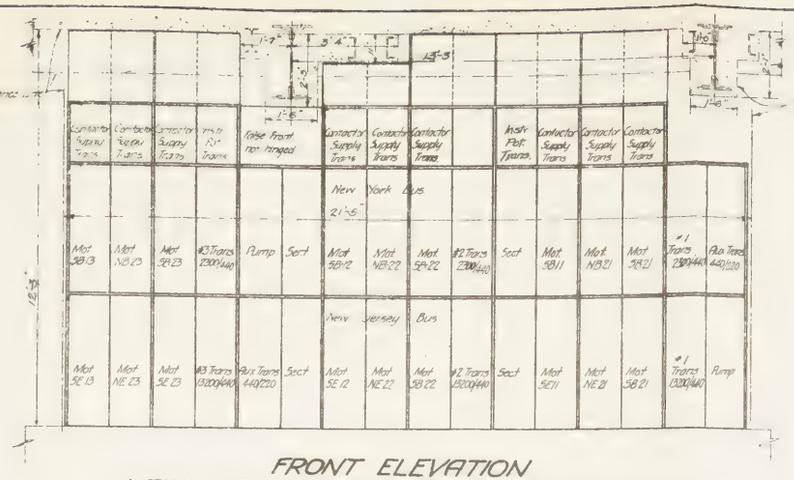
FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

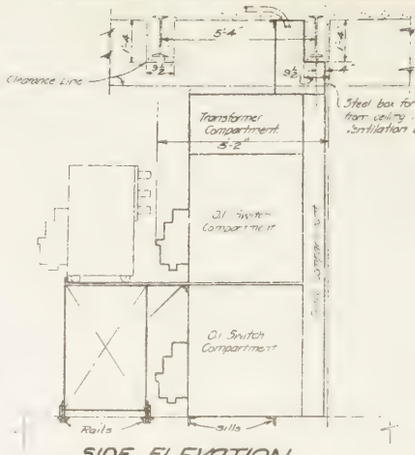


ELEVATION A

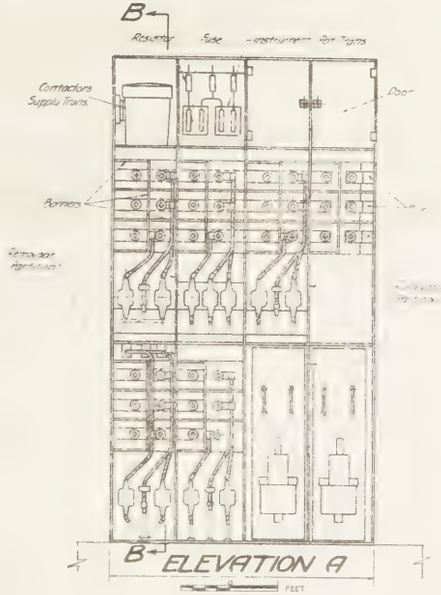
FRONT ELEVATION
NEW YORK LAND VENTILATION BUILDING

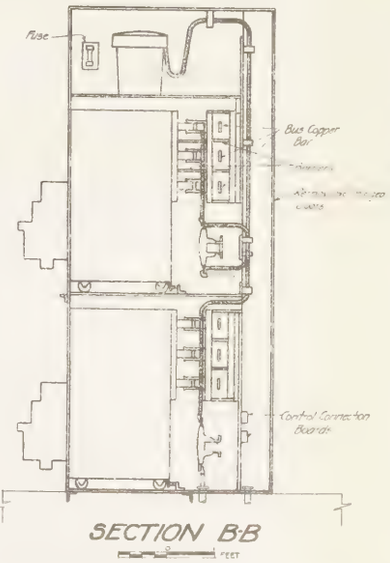


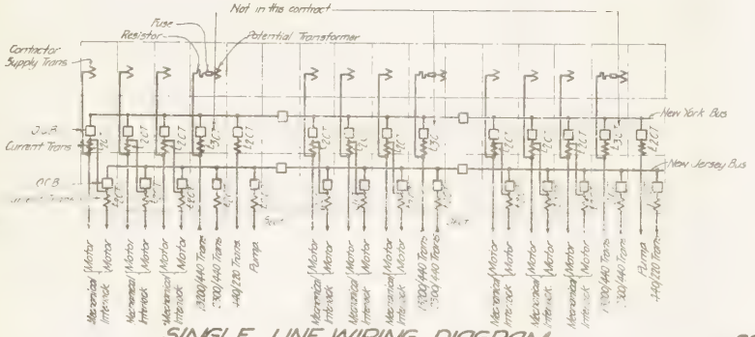
FRONT ELEVATION
NEW JERSEY LAND VENTILATION BUILDING



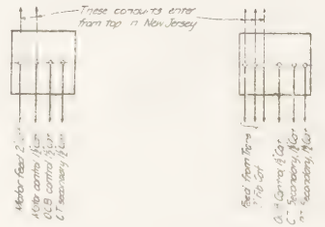
SIDE ELEVATION







SINGLE LINE WIRING DIAGRAM



CONDUITS AT
MOTOR SWITCH

CONDUITS AT
TRANSFORMER SWITCH

440 VOLT TRUCK TYPE OIL SWITCH INSTALLATION
LAND VENTILATION BUILDINGS

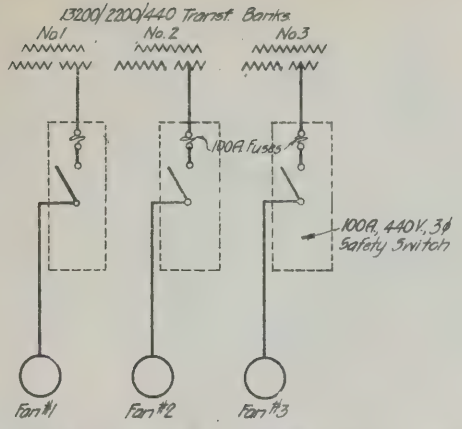
NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 12

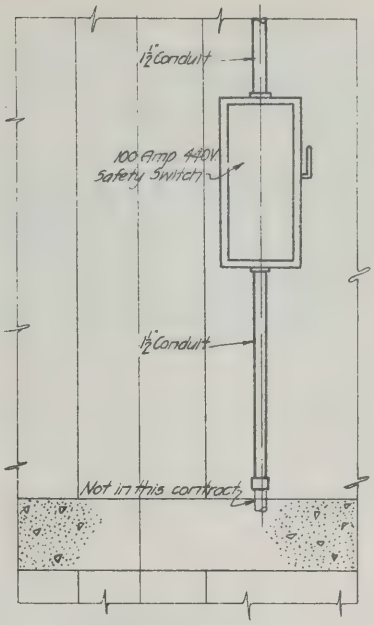
Oil Insulated

FILE NO. 19

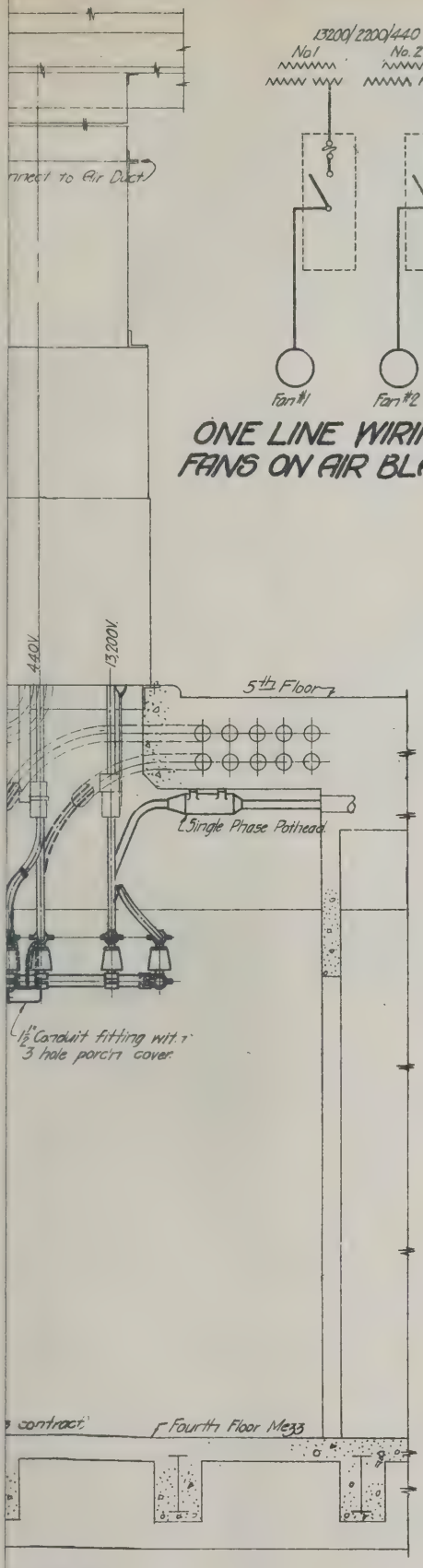
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



ONE LINE WIRING DIAGRAM FOR FANS ON AIR BLAST TRANSFORMERS



DETAIL A



CTION C-C

For Location Plan, see Contract Dwg. #4, File #1-19.

Note:
All connections to be taped to full insulation of cables.

L. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 13

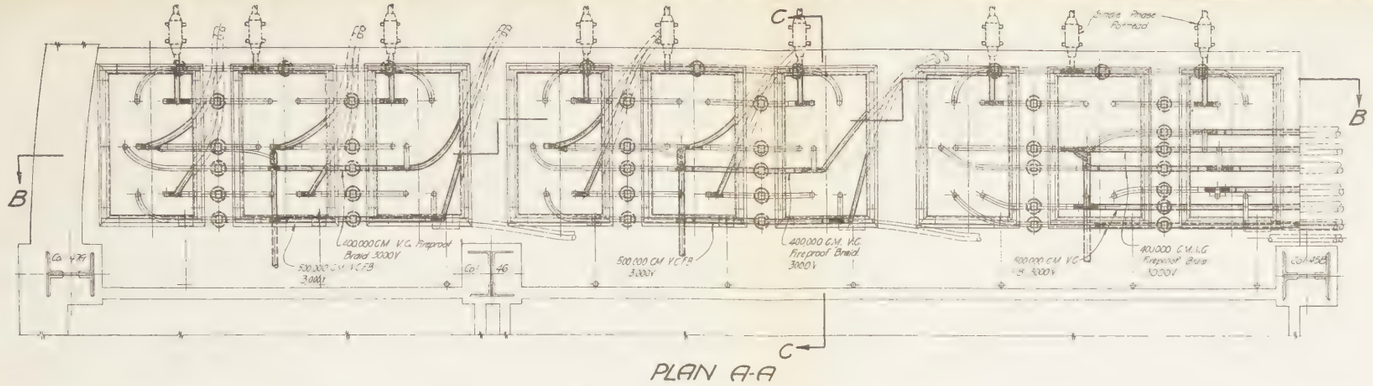
SCALE: 0 1 FEET

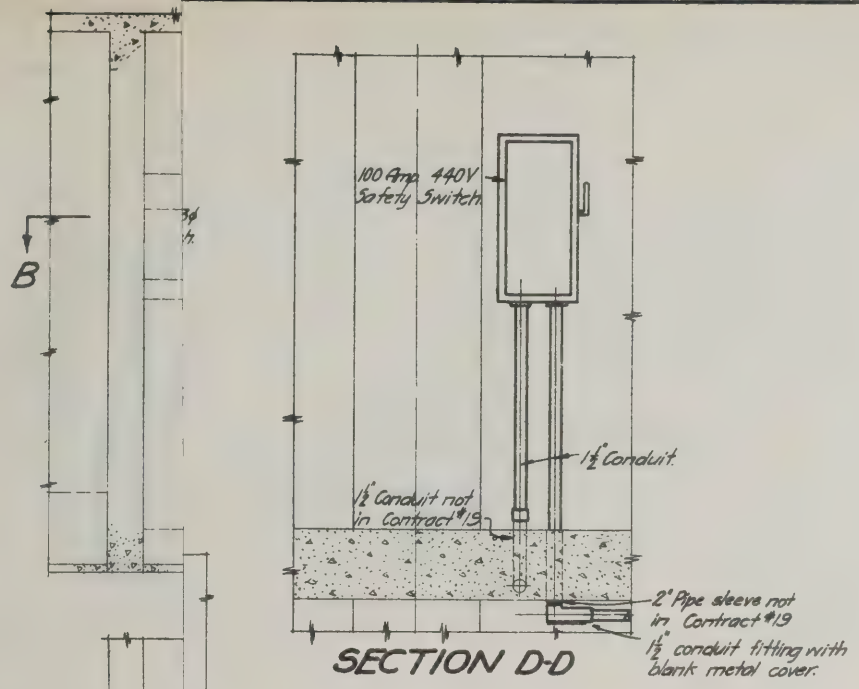
DATE MAY 18, 1926.

Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.


B
B
C
C
Fb
Fb
Fb



B

A

Connect with 2/0 bare copper cable to ground bus.

For. Location Plan, see Contract Dwg. #5, File #19

Note.
All connections to be taped to full insulation of cables.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 14

K. B. Stillwell
CONSULTING ENGINEER

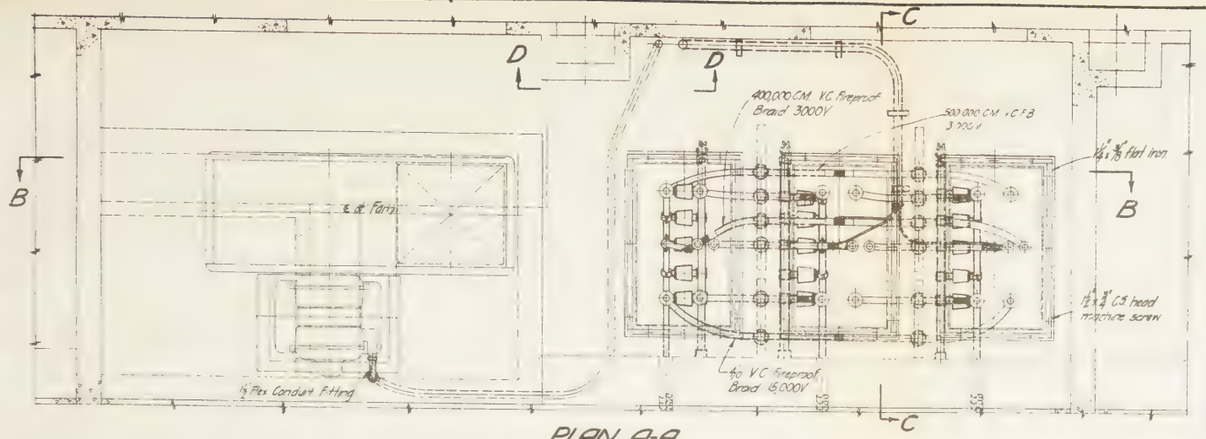
SCALE: 0 1 FEET

DATE MAY 18, 1926

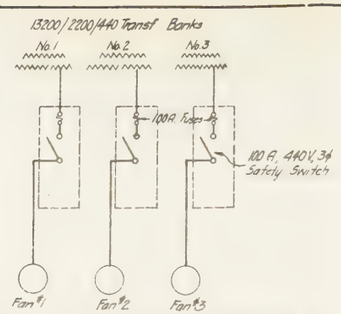
Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

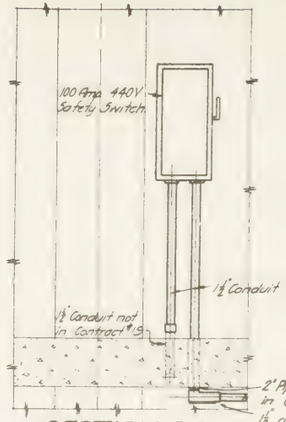
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



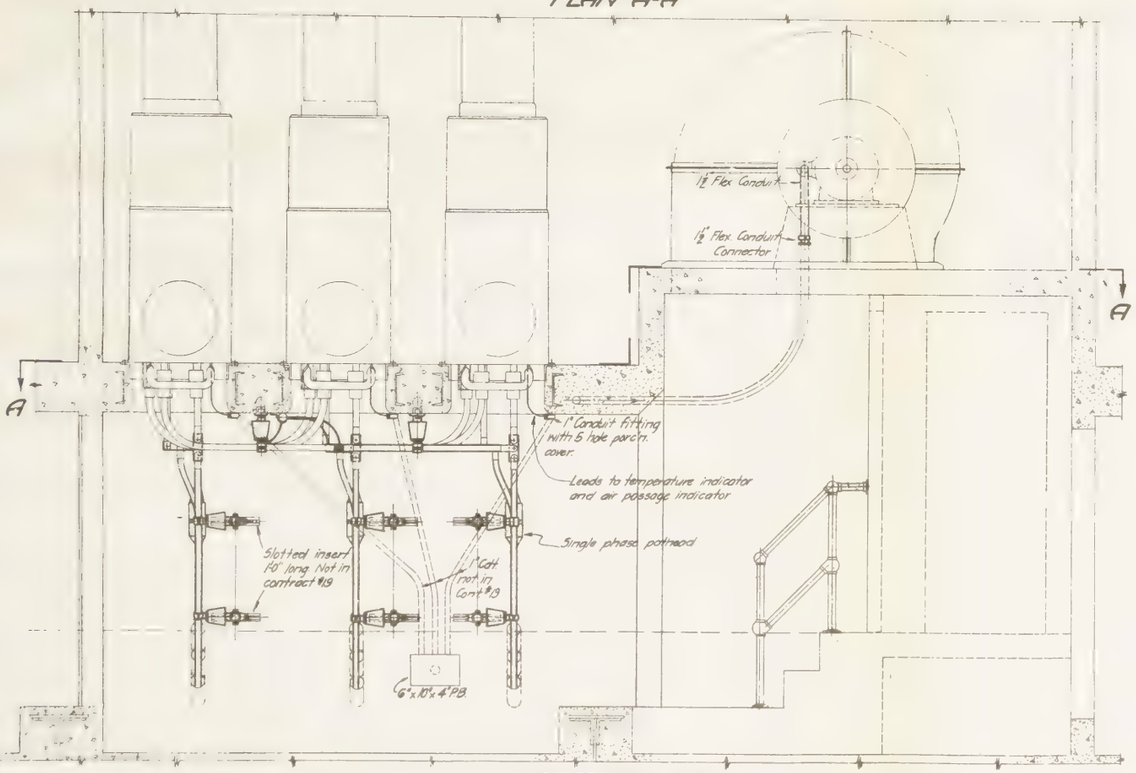
PLAN A-A



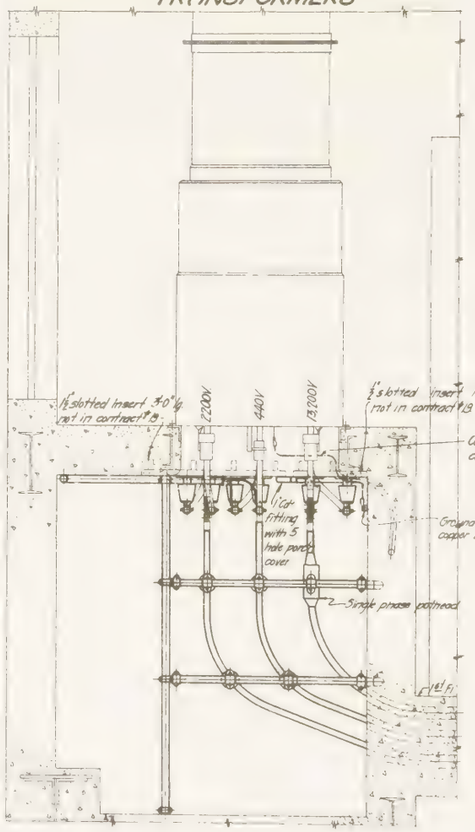
ONE LINE WIRING DIAGRAM FOR FANS ON AIR BLAST TRANSFORMERS


100 Amp. 440 V. Safety Switch
1/2" Conduit
1" Conduit not in Contract #19
2" Pipe sleeve not in Contract #19
1/2" conduit fitting with blank metal cover.

SECTION D-D


1/2" Flex. Conduit
1/2" Flex. Conduit Connector
A
A
1" Conduit fitting with 5 hole porc'n. cover.
Leads to temperature indicator and air passage indicator
Single phase pothead
Slotted insert 10' long. Not in contract #19
1" Cnt not in Cont #19
6"x10"x4" P.B.

SECTION B-B


1/2 slotted insert 3'-0" lg not in contract #19
2200V
440V
13,200V
1/2 slotted insert 1'-6" lg not in contract #19
Connect with 5/8 bare copper cable to ground bus
1" Conduit fitting with 5 hole porc'n cover
Ground bus 2"x 1/4" copper bar
Single phase pothead
14'-0"

SECTION C-C

For Location Plan, see Contract Dwg. #5, File #19

Note
All connections to be taped to full insulation of cables

AIR BLAST TRANSFORMER INSTALLATION LAND VENTILATION BUILDING, NEW JERSEY

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 14

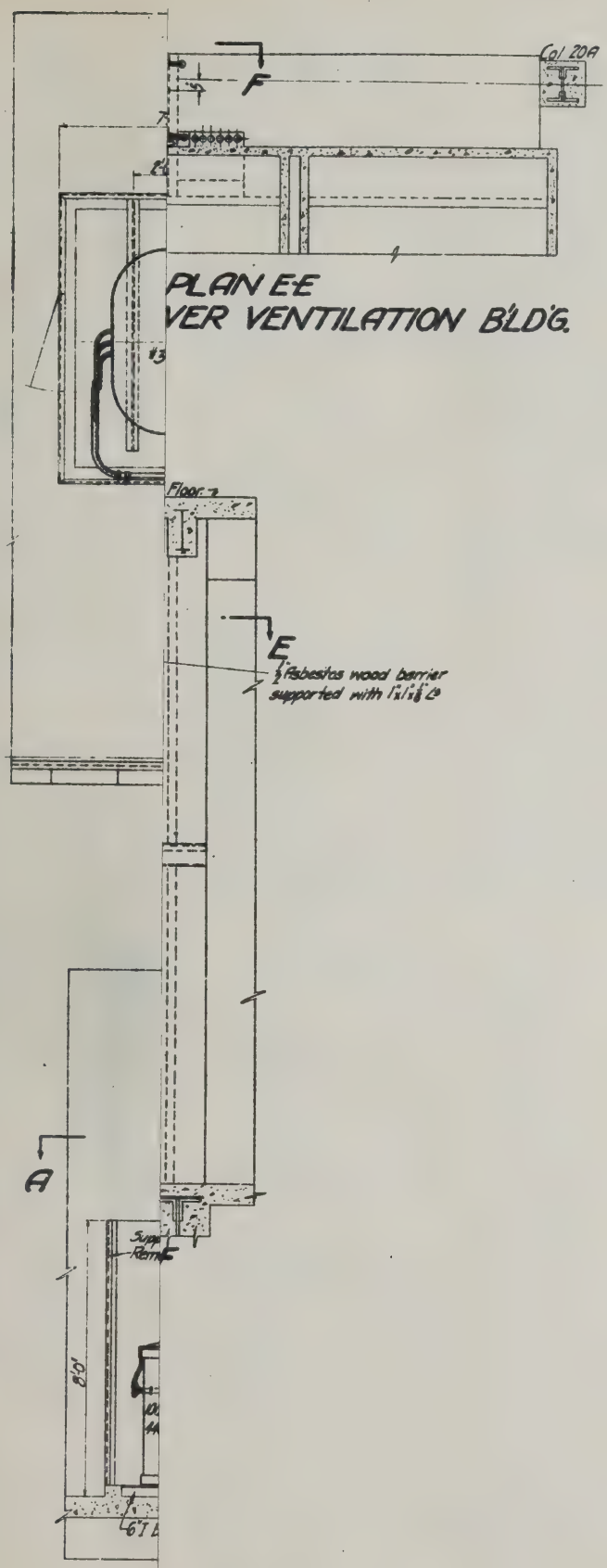
L. H. Gilliland
LIGHTING ENGINEER

SCALE — DATE MAY 18 1926

Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



ATION

YORK

L. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 15

SCALE: 0 1 2 3 FEET

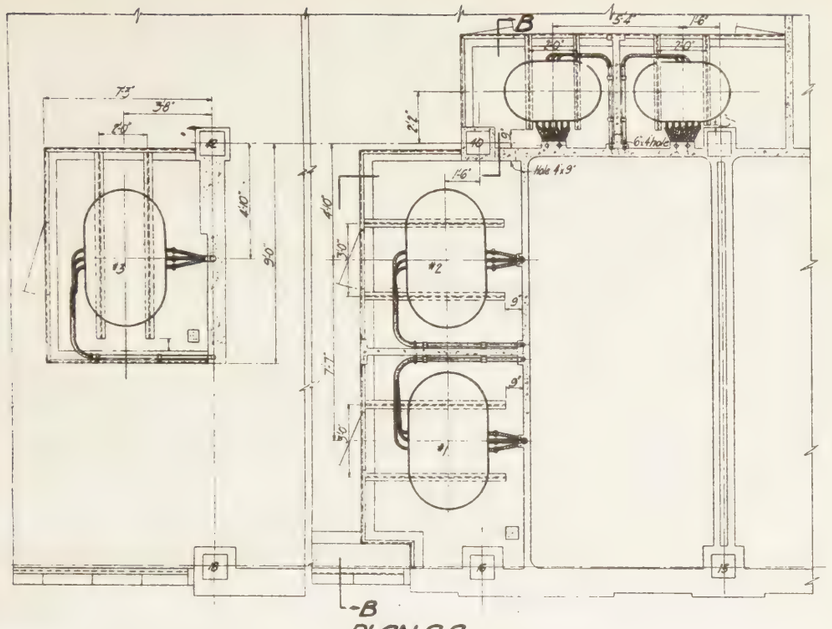
DATE MAY 19, 1926

Ole Singstad
CHIEF ENGINEER

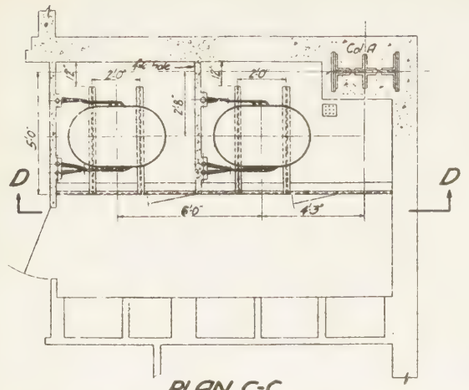
FILE NO. 1-19

DRAWN BY RLC
CHECKED BY CG

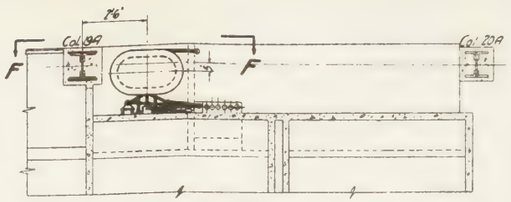
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



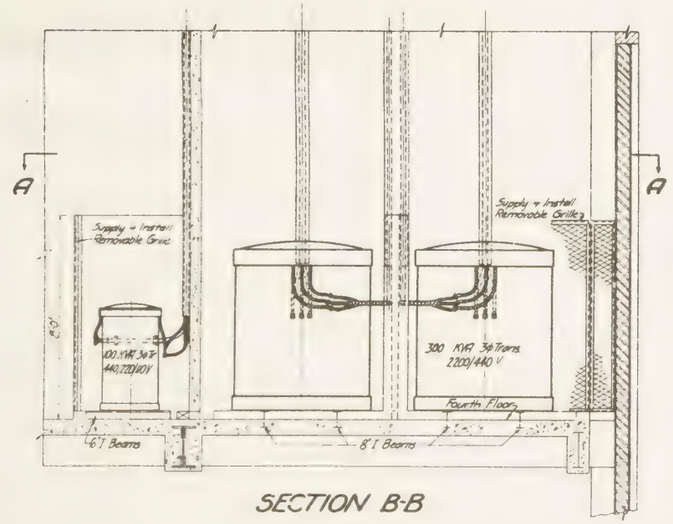
PLAN A-A
NEW YORK LAND VENTILATION B'L'D'G.



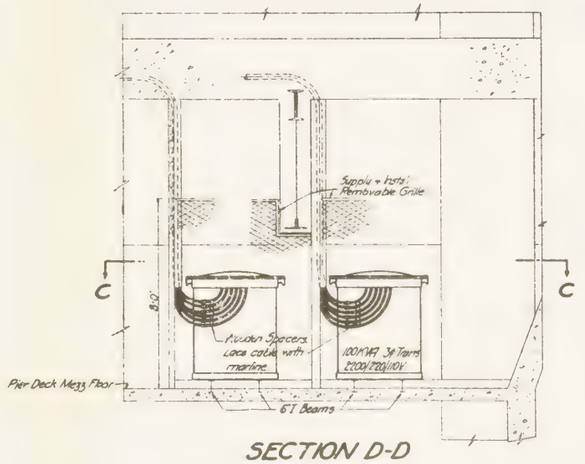
PLAN C-C
NEW YORK RIVER VENTILATION B'L'D'G.



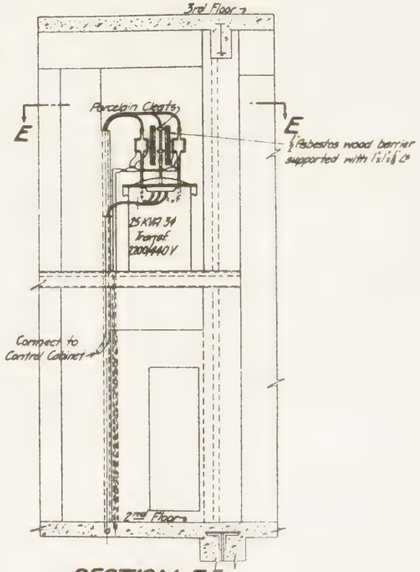
PLAN E-E
NEW YORK RIVER VENTILATION B'L'D'G.



SECTION B-B



SECTION D-D



SECTION F-F

POWER & LIGHTING TRANSFORMER INSTALLATION LAND & RIVER VENTILATION BUILDINGS, NEW YORK

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

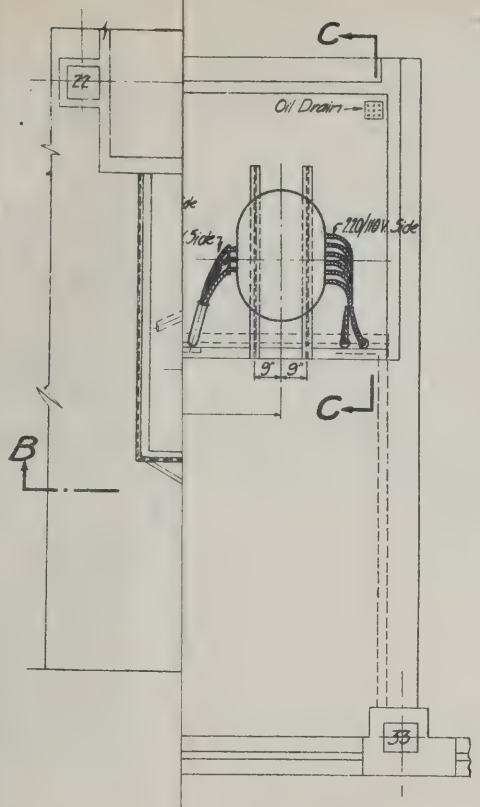
THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 15

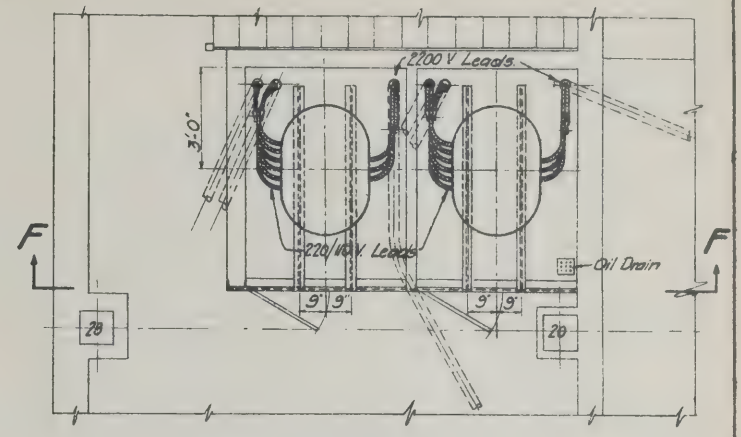
SCALE — FEET — DATE MAY 18 1926

CHIEF ENGINEER

FILE NO. 1-19

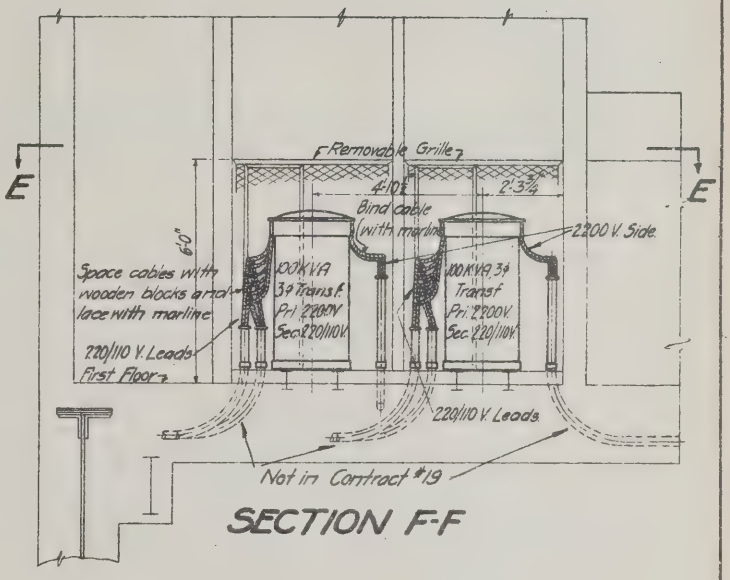
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



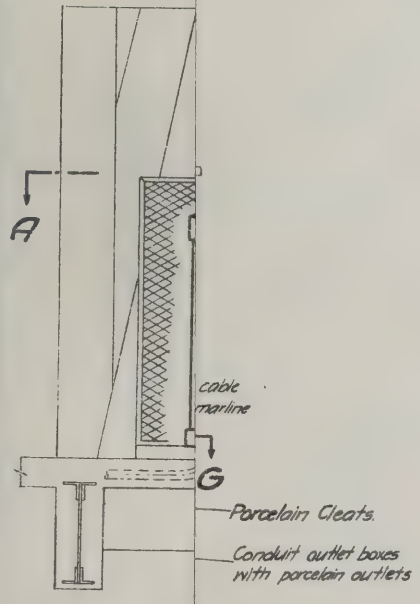


PLAN E-E

NEW JERSEY RIVER VENT. BUILDING



SECTION F-F



Floor.

ST.

G.

H. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 16

SCALE: 0 1 2 FEET

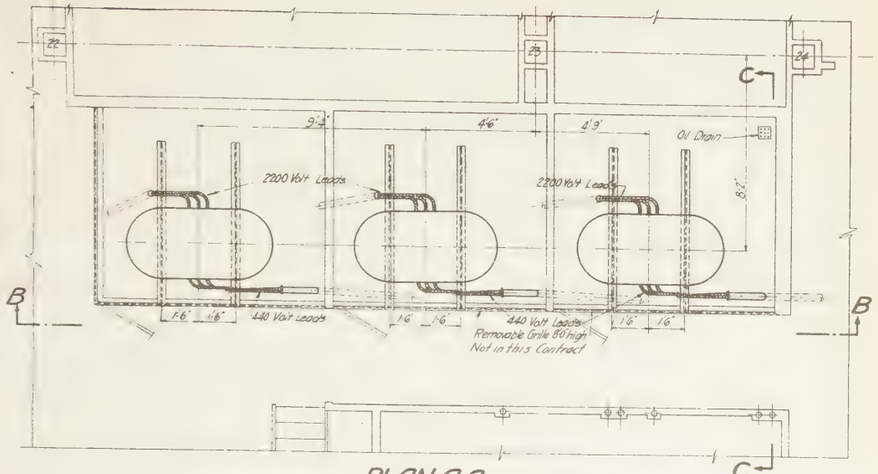
DATE MAY 16, 1926

Ole Singstad
CHIEF ENGINEER

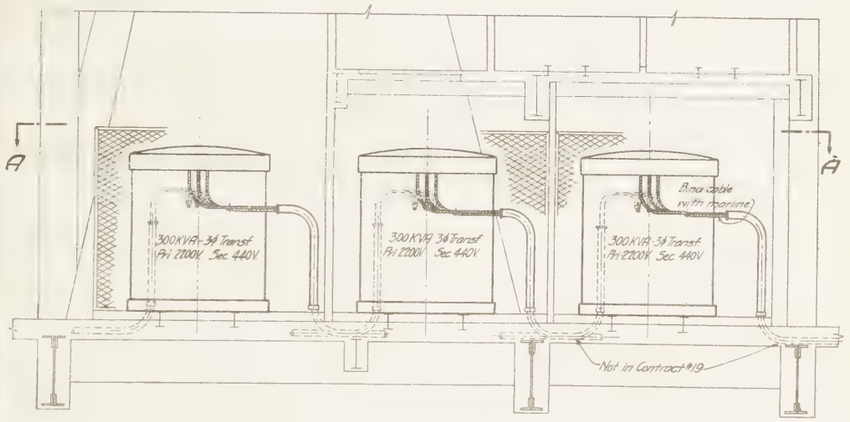
DRAWN BY
CHECKED BY

FILE NO H19

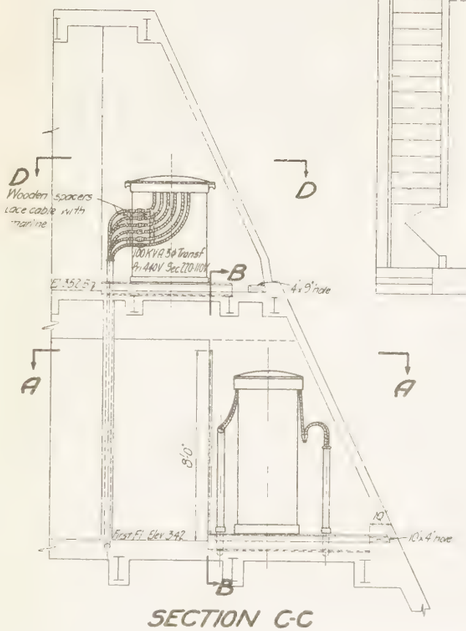
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



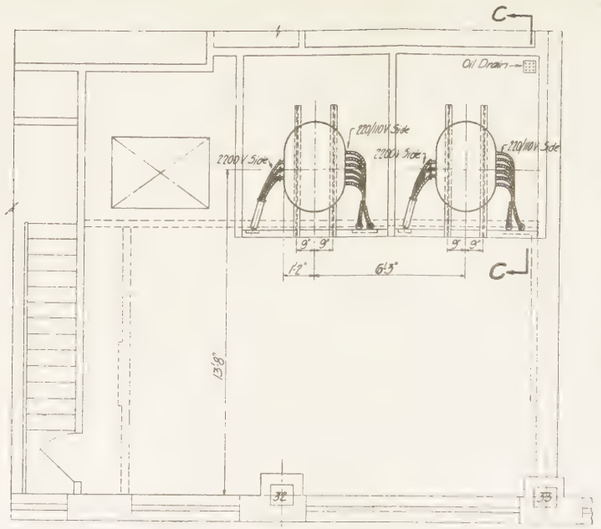
PLAN A-A
NEW JERSEY LAND VENTILATION BUILDING



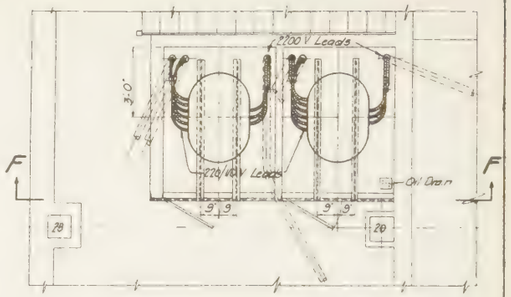
SECTION B-B



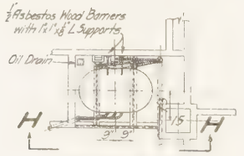
SECTION C-C



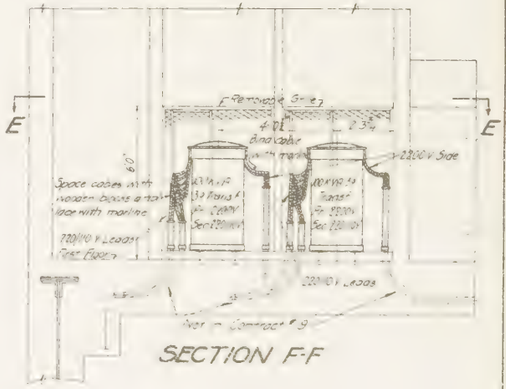
PLAN D-D



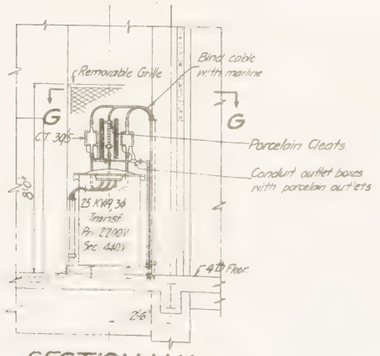
PLAN E-E
NEW JERSEY RIVER VENT. BUILDING



PLAN G-G



SECTION F-F



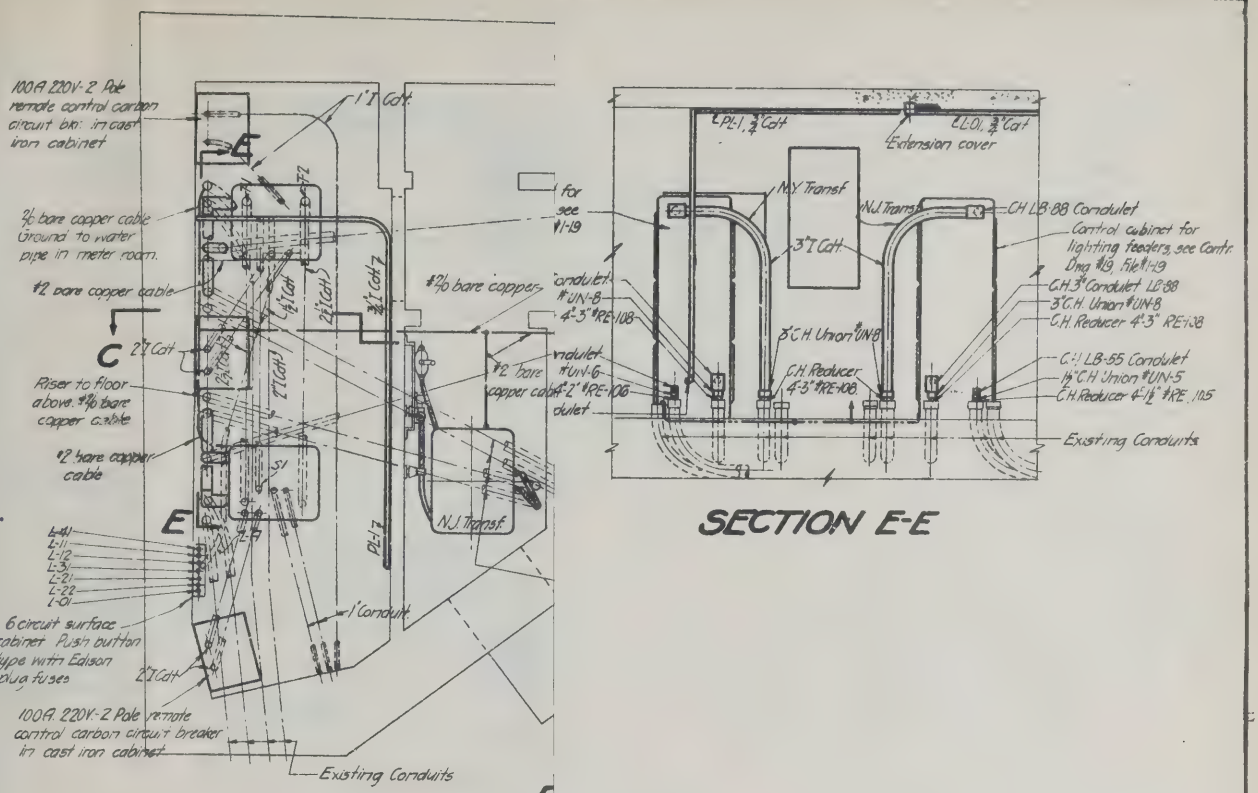
SECTION H-H
TYPICAL TRANSF. INST.
FOR 25 H.P. MOTORS.
N.J. RIVER VENT. BLDG.

POWER & LIGHTING TRANSFORMER INSTALLATION
LAND & RIVER VENTILATION BUILDINGS, NEW JERSEY

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No 19
CONTRACT DRAWING No 16

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 17

SCALE: 0 1 2 3 4 FEET DATE MAY 18, 1926

Ole Singstad
CHIEF ENGINEER

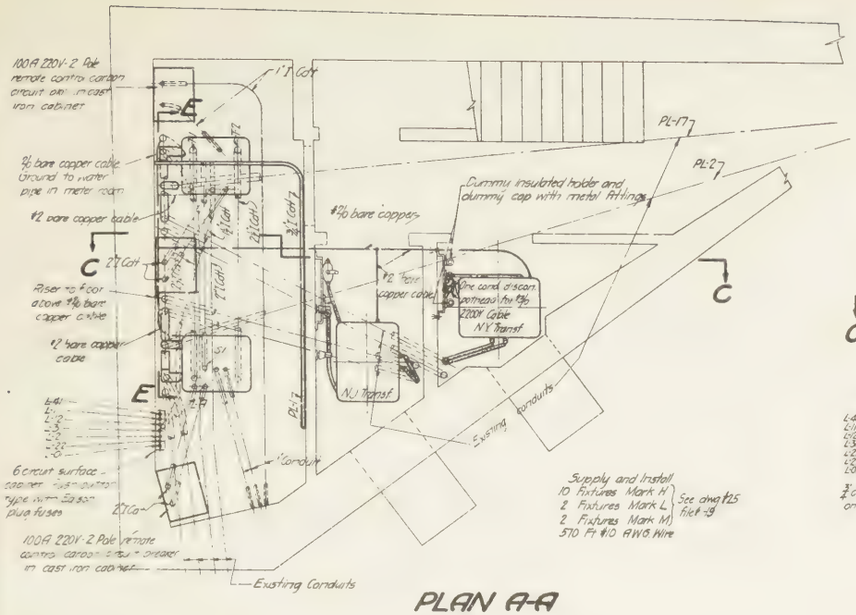
J. N. Dodd
ELECTRICAL ENGINEER

Ralph Smillie
ENGINEER OF DESIGNS

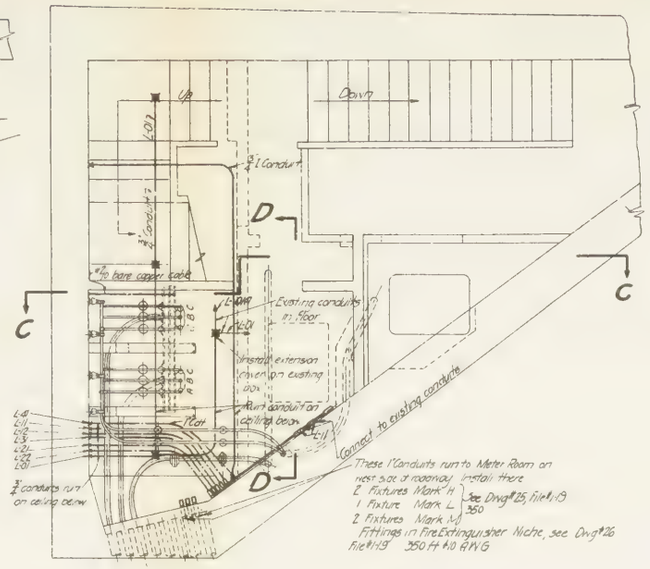
DRAWN BY
CHECKED BY

FILE NO 1-19

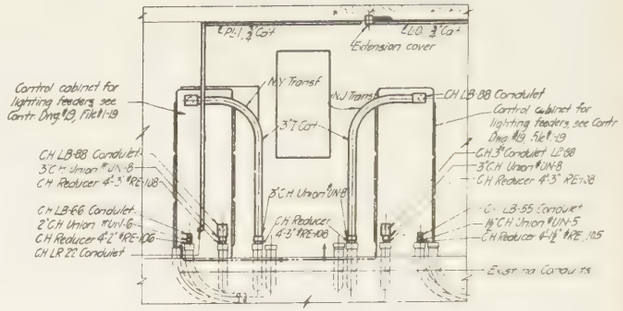
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.


100A 220V-2 Pole remote control carbon circuit breaker in cast iron cabinet
1"A Conduit
PL-17
PL-2
⅜ bare copper cable Ground to water pipe in meter room
#2 bare copper cable
Dummy insulated holder and dummy cap with metal fittings
#⅜ bare copper
#2 bare copper cable
One cond. disconnect pothead for ⅜ 220V Cable N.Y. Transit
2"A Conduit
Riser to floor above #⅜ bare copper cable
#2 bare copper cable
N.J. Transit
Existing conduits
1"Conduit
6 circuit surface cabinet with cartridge type main & branch plug fuses
100A 220V-2 Pole remote control carbon circuit breaker in cast iron cabinet
Existing Conduits
Supply and Install
10 Fixtures Mark H
2 Fixtures Mark L
2 Fixtures Mark M
510 Ft #10 R.W.G. Wire
See drwg #25 filet-19

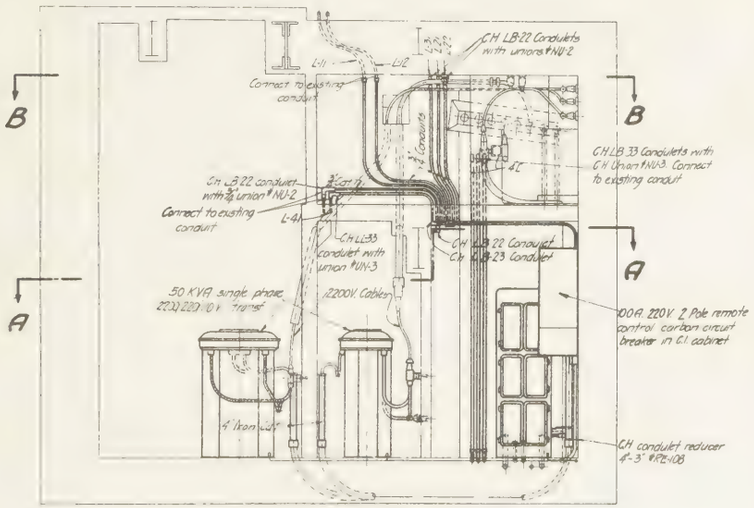
PLAN A-A


Up
Down
1"A Conduit
Existing conduits in floor
Install extension cover on existing duct
Run conduit on ceiling beam
Connect to existing conduits
These 1"Conduits run to Meter Room on next sec. of roadway, install there
2 Fixtures Mark H
1 Fixture Mark L
2 Fixtures Mark M
Fittings in Fire Extinguisher Niche, see Drwg #26
See Drwg #25, filet-19
350 ft #10 A.W.G.

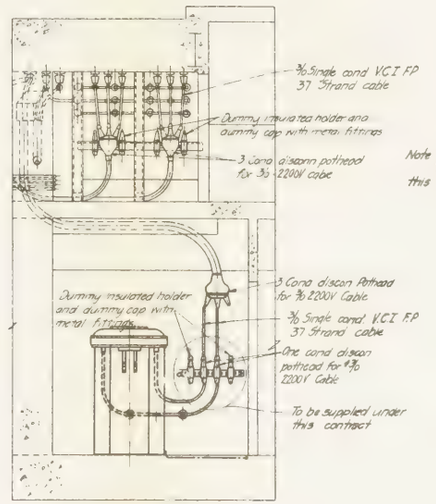
PLAN B-B



SECTION E-E


C.H. LB-22 Conduits with unions #NU-2
Connect to existing conduit
1"Conduits
C.H. LB-33 Conduits with C.H. Union #NU-3. Connect to existing conduit
C.H. LB-22 conduit with ¾" union #NU-2
¾"Cot
Connect to existing conduit
C.H. LB-33 conduit with union #UN-3
C.H. LB-22 Conduit
C.H. LB-23 Conduit
50 KVA single phase 2200/220-110 V. transit
2200V. Cables
100A 220V 2 Pole remote control carbon circuit breaker in C.I. cabinet
4"Iron Cot
C.H. conduit reducer 4"-3" #RE-108

SECTION C-C


⅜ Single cond. V.C.I. F.P. 37 Strand cable
Dummy insulated holder and dummy cap with metal fittings
3 Cond. disconn Pothead for ⅜ 2200V. Cable
Dummy insulated holder and dummy cap with metal fittings
3 Cond. disconn Pothead for ⅜ 2200V. Cable
⅜ Single cond. V.C.I. F.P. 37 Strand cable
One cond. disconn pothead for ⅜ 2200V. Cable
To be supplied under this contract

SECTION D-D

Note
The potheads, busbars, ground cable and insulators shown on this drawing are not included in this contract except as noted.

LEGEND
- Conduit in walls or floor
- Ground cable in walls or floor
- 3⅜ x 3⅜ x 2" C.I. outlet box
- Conduit turning up
- Conduit turning down

TRANSFORMERS AND EQUIPMENT NORTH PORTAL, NEW YORK

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 17

L. H. Steinert
CONSULTING ENGINEER

SCALE: FEET DATE MAY 18, 1926

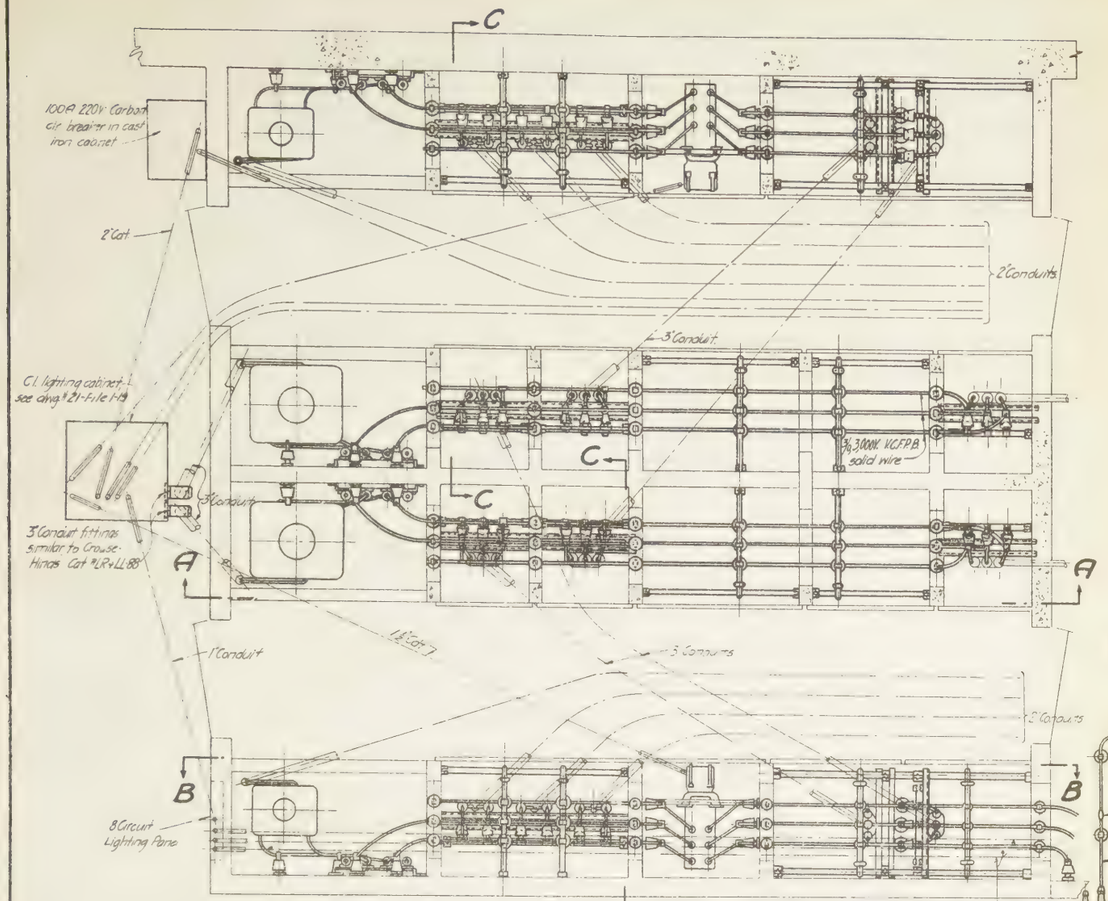
Ole Singstad
CHIEF ENGINEER

DRAWN BY
CHECKED BY

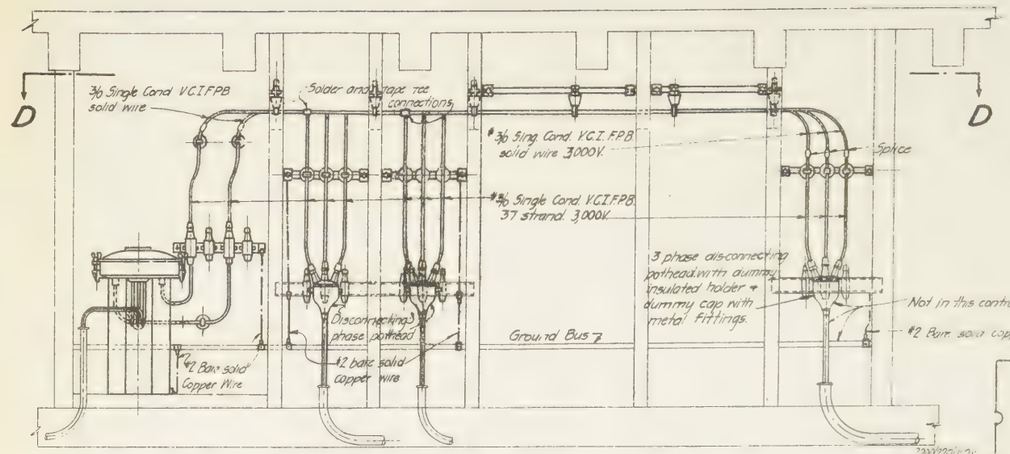
Ralph Smith
PRINCIPAL ASSISTANT

FILE NO.

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

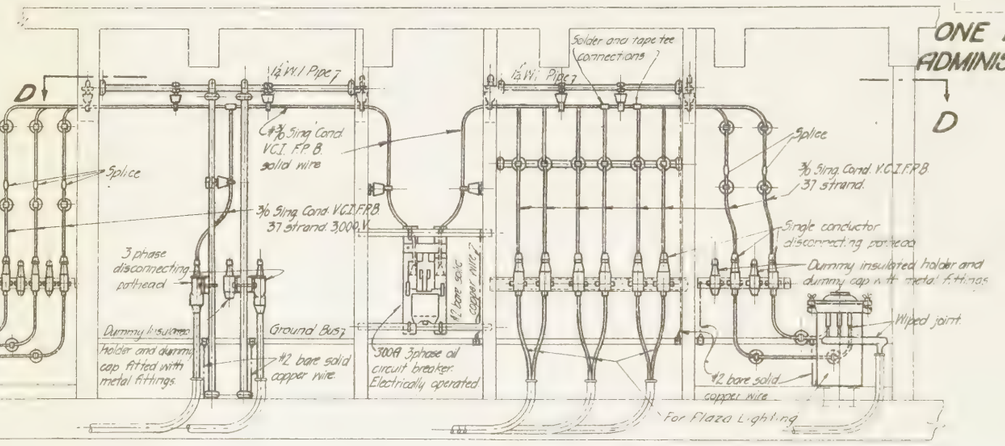


SECTION D-D

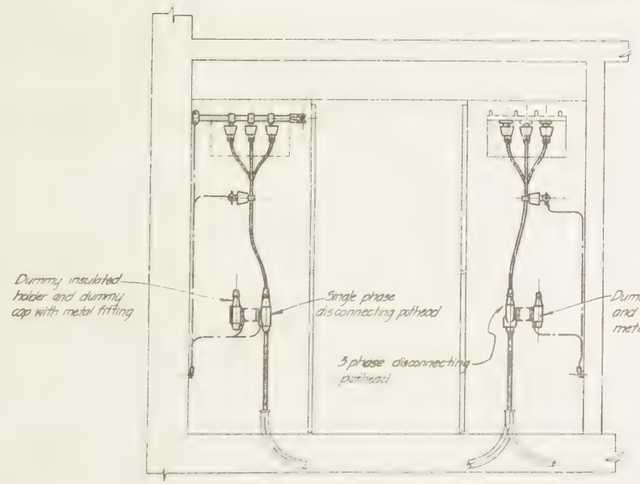

D
#3/0 Single Cond. V.C.I. F.P.B. solid wire
Solder and tape tee connections
#3/0 Sing. Cond. V.C.I. F.P.B. solid wire 3000 V.
#3/0 Single Cond. V.C.I. F.P.B. 37 strand 3,000 V.
Splice
3 phase disconnecting pothead with dummy insulated holder & dummy cap with metal fittings.
Disconnecting 3 phase pothead
Ground Bus 7
#2 Bare solid Copper Wire
#2 bare solid copper wire
Not in this contract
#2 Bare solid copper wire
2200 V. N.Y.
2200/220/110 V. Single ϕ
2200/220/110 V. Single ϕ
Carbon Ckt. Bkr.
2200 V. N.J.
2200/220 V. 3ϕ
Carbon Ckt. Bkr.

SECTION A-A

ONE LINE DIAGRAM
ADMINISTRATION B'LD'G, N.Y

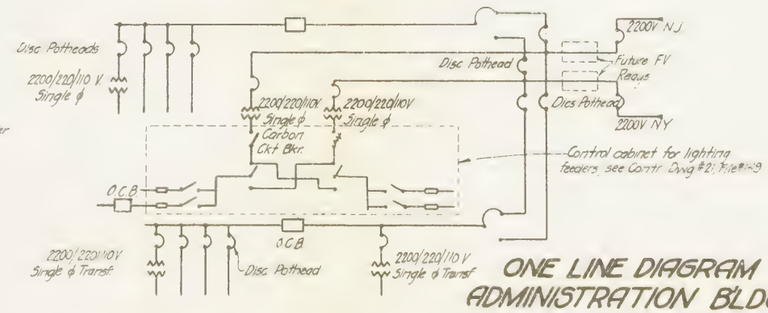

D
½" W.I. Pipe 7
½" W.I. Pipe 7
Solder and tape tee connections
#3/0 Sing. Cond. V.C.I. F.P.B. solid wire
Splice
3/0 Sing. Cond. V.C.I. F.P.B. 37 strand 3,000 V.
3 phase disconnecting pothead
Dummy insulated holder and dummy cap fitted with metal fittings
Ground Bus 7
#2 bare solid copper wire
300A 3 phase oil circuit breaker. Electrically operated
#2 bare solid copper wire
Splice
3/0 Sing. Cond. V.C.I. F.P.B. 37 strand.
Single conductor disconnecting pothead
Dummy insulated holder and dummy cap with metal fittings
Wiped joint
#2 bare solid copper wire
For Plaza Lighting

SECTION B-B


Dummy insulated holder and dummy cap with metal fitting
Single phase disconnecting pothead
3 phase disconnecting pothead
Dummy insulated holder and dummy cap with metal fittings

SECTION C-C

Notes:
All transformer terminals to be bolted with brass bolts and taped to full insulation of cable.



ONE LINE DIAGRAM
ADMINISTRATION B'LD'G, N.J.

Transformers and equipment in Administration Building, New York similar but not identical.

TRANSFORMERS AND EQUIPMENT ADMINISTRATION BUILDING, NEW JERSEY

L. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 18

SCALE: FEET DATE MAY 18, 1926.

Ole Singstad
CHIEF ENGINEER

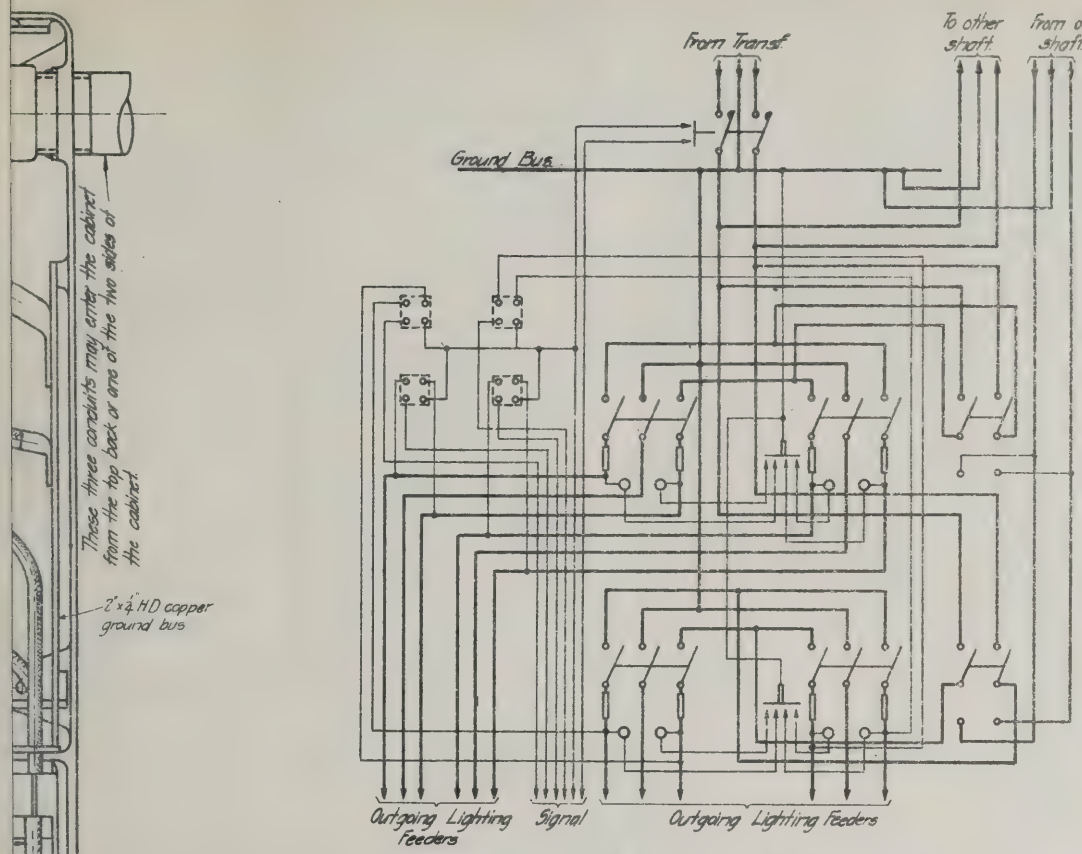
FILE NO. H-9

DRAWN BY
CHEC'ED BY

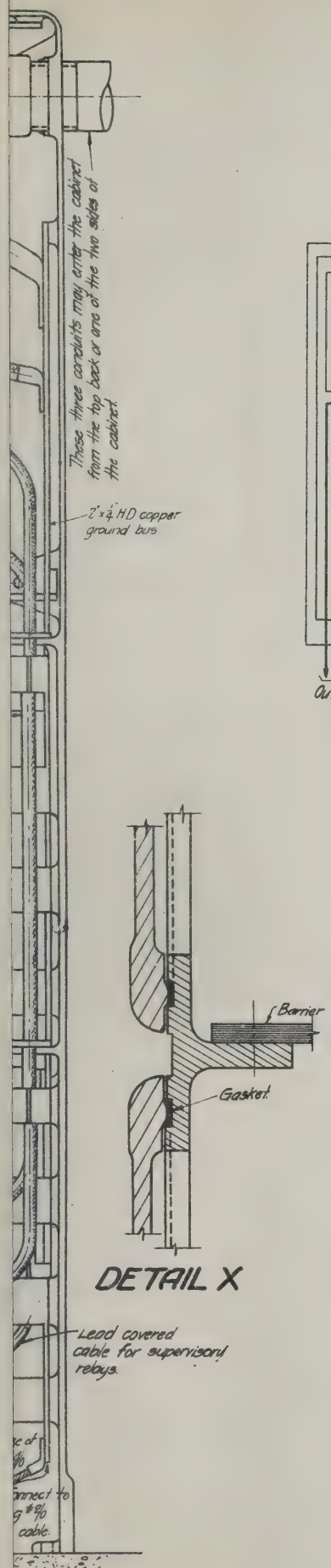
J. M. Dodd
ELECTRICAL ENGINEER

ENGINEER OF DESIGNS

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



TYPICAL WIRING DIAGRAM


These three conduits may enter the cabinet from the top back or one of the two sides of the cabinet.
2"x¼" HD copper ground bus
Barrier
Gasket
Lead covered cable for supervisory relays.

DETAIL X

Location of Cabinet	Breakers, Switches, Fuses, Conduits and Conductors Required for Each Cabinet											
	C.C. Breaker No.	100 Amp. T.P.S.T. Sw. No.	Fuse		200 Amp. D.P.D.T. Sw. No.	Exposed Conduit			Conductors			
			No.	Amp.		2" Ft.	3" Ft.	4" Ft.	Transf. Mains Length Ft.	Transf. Mains Size C.M.	Tie between cabinets Length Ft.	Tie between cabinets Size R.W.G.
N.Y. Administr. Bldg.	2	4	4 4	40 60	2	-	15	-	25 25	250,000 250,000	—	—
North N.Y. Portals A	1	4	6 2	40 60	2	20	10	-	25	400,000	25	00
North N.Y. Portals B	1	4	2 6	40 60	2	20	15	-	25	400,000	25	00
Canal St. Shaft	1	4	4 4	40 90	2	30	-	25	30	500,000	325	00
Spring St. Shaft	1	4	8	40	2	5	-	15	20	500,000	325	00
South N.Y. River Shaft	1	4	4 4	40 120	2	-	30	10	15	500,000	110	0000
North N.Y. River Shaft	1	4	4 4	40 120	2	-	30	10	30	500,000	110	0000
South N.J. River Shaft	1	4	4 4	40 120	2	-	30	10	30	500,000	125	0000
North N.J. River Shaft	1	4	4 4	40 120	2	-	30	10	15	500,000	125	0000
South N.J. Land Shaft	1	4	4 4	40 120	2	15	-	10	35	400,000	45	00
North N.J. Land Shaft	1	4	8	40	2	15	-	15	20	400,000	45	00
N.J. Administr. Bldg.	2	4	4 2 2	40 60 120	2	—	15	—	35 35	250,000 250,000	—	—

The conductors are to be 600 Volt rubber insulated wire. The lengths given are for a single length of the three wires in each conduit.
The length of the wires inside the cabinet is not included in the schedule.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 19

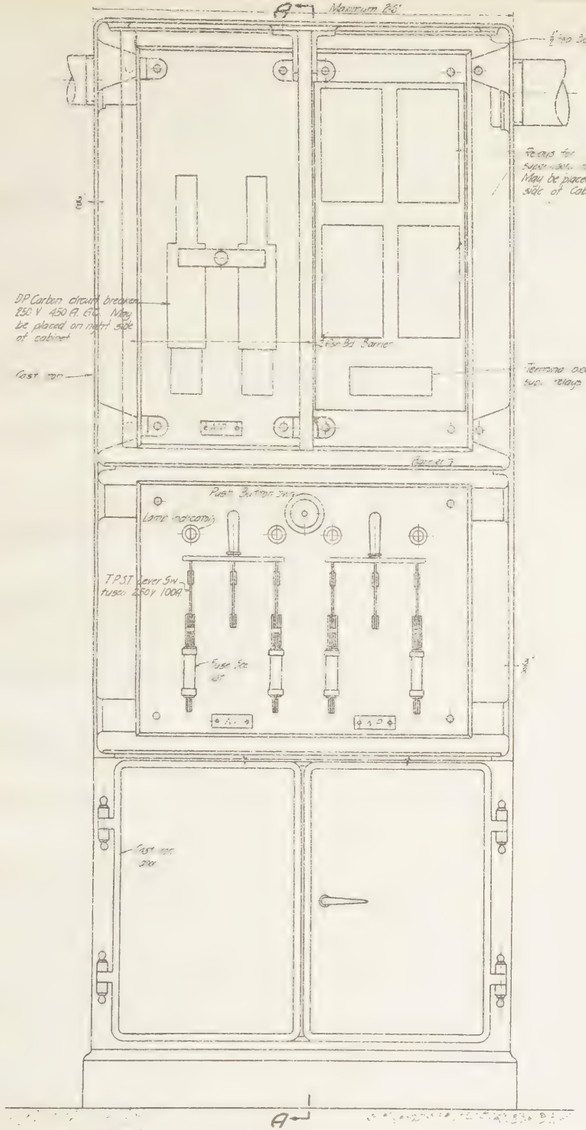
L. B. Silverman
CONSULTING ENGINEER

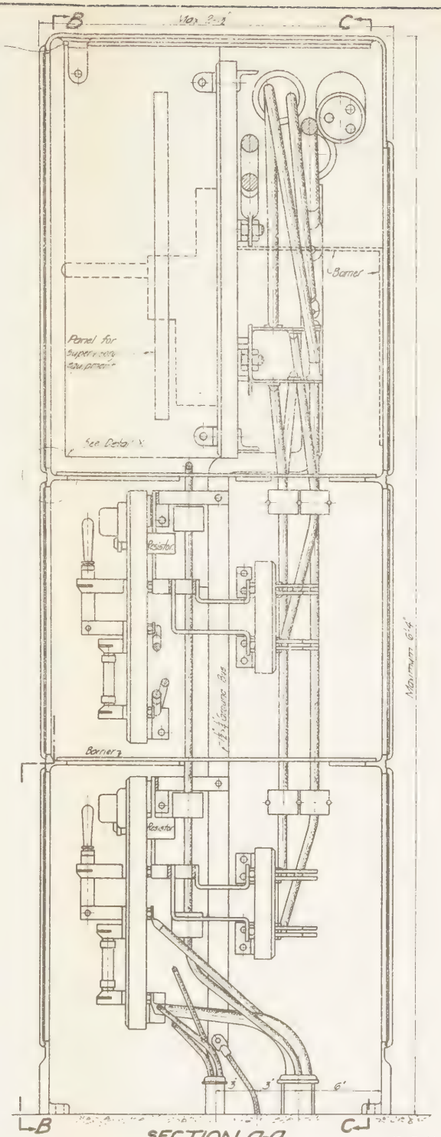
SCALE: 0 1 2 3 4 5 6 INCHES. DATE MAY 18, 1926

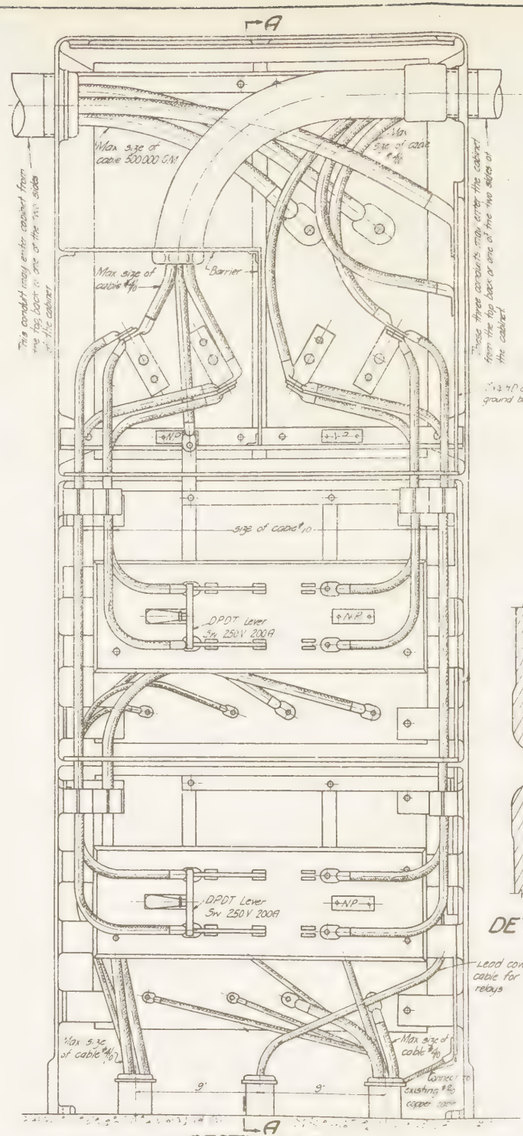
Ole Singstad
CHIEF ENGINEER

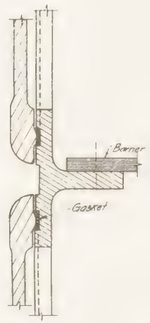
FILE NO. H-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

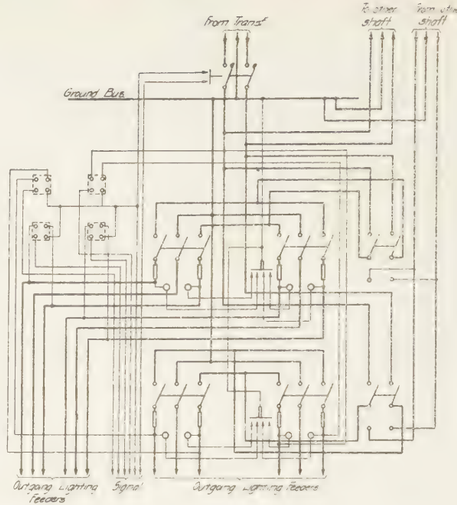

A
Maximum 86"
4"x4" 3a barrier
Relays for supervising system may be placed on left side of cabinet
DP Carbon circuit breaker 250 V 450 A. GE. May be placed on right side of cabinet
Fast sign
Fish Bar Barrier
Terminal block for sup. relays
Panel #3
Push Button Sw
Lamp indicators
T.P.S.T. Lever Sw fuses 250 V 100A
Fuse Stc 40A
Fast sign door
SECTION B-B




A
Max size of cable 500,000 CM
Max size of cable #/0
Barrier
Max size of cable #/0
The conduit may enter cabinet from the top, bottom or side of the cabinet
Those three conduits may enter the cabinet from the top back or one of the side of the cabinet
#1/0 copper ground bar
size of cable #/0
D.P.D.T. Lever Sw 250 V. 200A
N.P.
D.P.D.T. Lever Sw 250 V. 200A
N.P.
Lead covered cable for supervisory relays
Max size of cable #/0
Max size of cable #/0
Connect to existing #6 copper cable
9'
9'
SECTION C-C



DETAIL X



TYPICAL WIRING DIAGRAM

Location of Cabinet	Breakers Switches Fuses Contacts and Conductors Required for Each Cabinet														
	C.O. Breaker No.	100 Amp D.P.D.T. Sw No.		Fuse No.	200 Amp D.P.D.T. Sw No.	Control circuit			Conductors						
						Amp	No.	Fuses	Control Wire						
									Length ft.	Size CM	Current A.	Size AWG			
Williamsburg Shaft	2	4		4	400	2	-	15	-	22	350,000	-	-		
North River #8	1	4		4	400	2	-	20	10	-	24	4/0 AWG	35	00	
West Virginia 9	1	4		4	400	2	-	20	5	-	23	4/0 AWG	25	00	
Canal St Shaft	1	4		4	400	2	-	30	-	25	30	300 AWG	325	00	
Varick St Shaft	1	4		4	400	2	-	5	-	5	20	500 AWG	425	0	
South Ventilating Shaft	1	4		4	400	2	-	30	10	5	20,300	0	0000		
North River Shaft	1	4		4	400	2	-	30	10	30	30,300	00	0000		
South Ventilating Shaft		4		4	400	2	-	30	10	30	30,300	25	000		
North Ventilating Shaft		4		4	400	1	-	30	10	5	400,300	425	0000		
South Ventilating Shaft		4		4	400	2	15	-	6	35	400,300	45	00		
North Ventilating Shaft		4		4	400	2	15	-	15	20	400,300	45	00		
Substation #29	2	4			400	2	-	5	-	38	250,300	-	-		
										36	250,300				

The conductors are to be 600 Volt rubber insulated wire. The lengths given are for a single length of the three wires in each conduit.
The length of the wires inside the cabinet is not included in the schedule.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 19

CONSULTING ENGINEER

SCALE INCHES DATE MAY 18, 1926

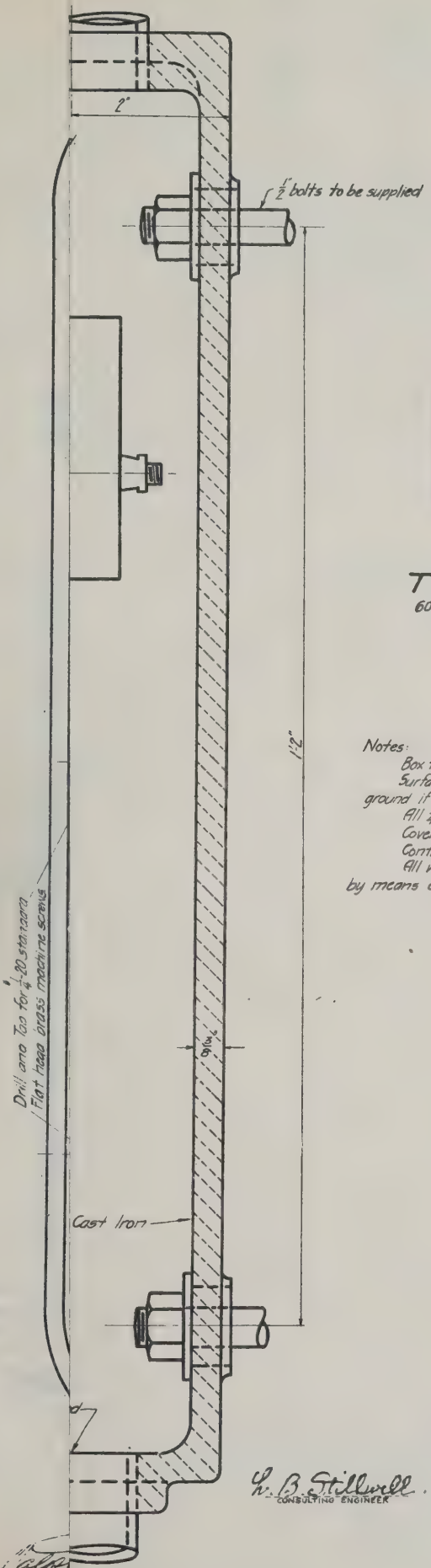
CHIEF ENGINEER

FILE NO. H-19

CONTROL CABINET FOR LIGHTING FEEDERS

DRAWN BY F.F.
TRACED BY L.D.

M. B. Brown Printing & Binding Co.



TYPE A
60 Required

TYPE B
24 Required.

Notes:

Box to be cast iron, panel to be steel plate.
Surfaces marked "S" to be free of burrs and projections, and to be ground if necessary.
All 1/4" tapped holes to be drilled to template, and threads to be clean and sharp.
Cover screws, eye bolts and chain to be brass.
Control wiring inside of box to be supported on insulating cleats.
All wire connections shall be taped and separated from ground by means of fibre sheets 1/16" thick.

L. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

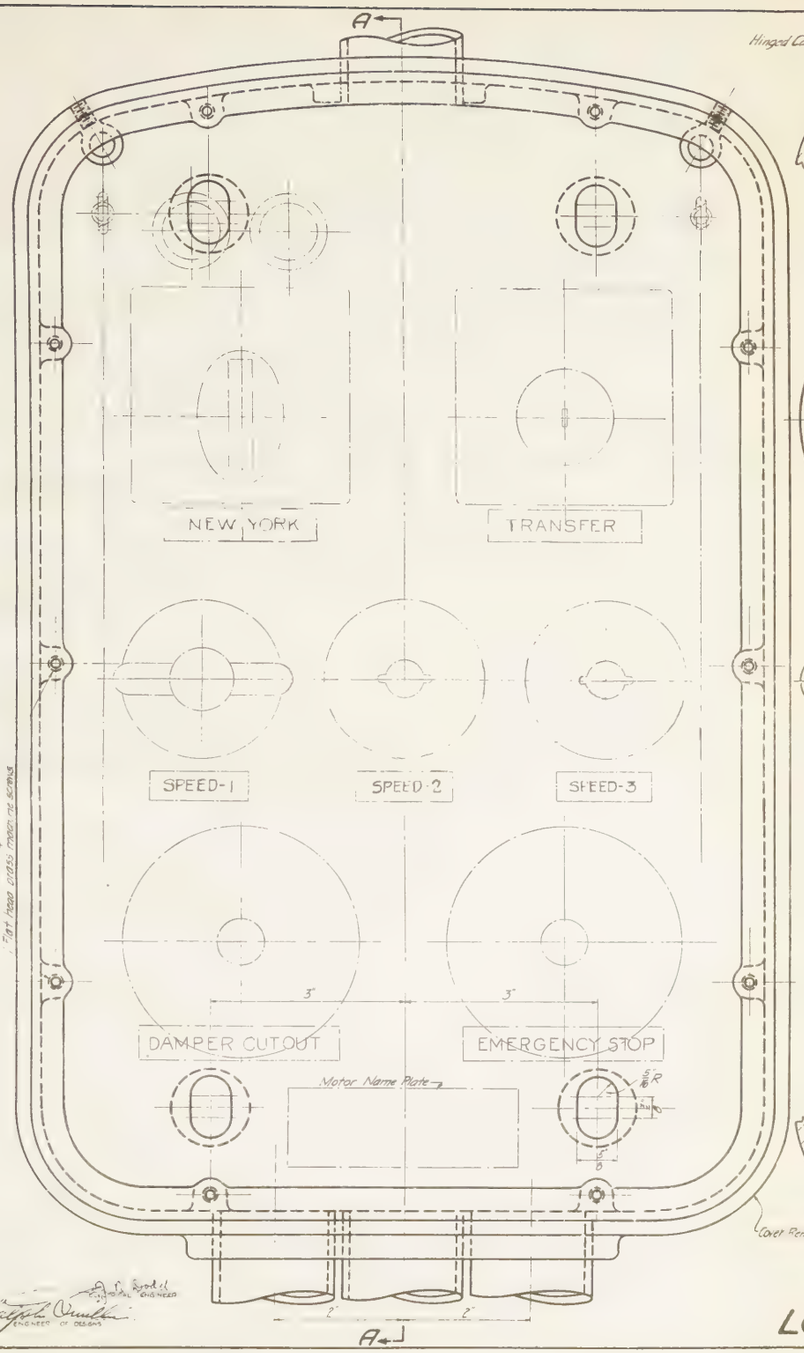
CONTRACT No. 19
CONTRACT DRAWING No. 20

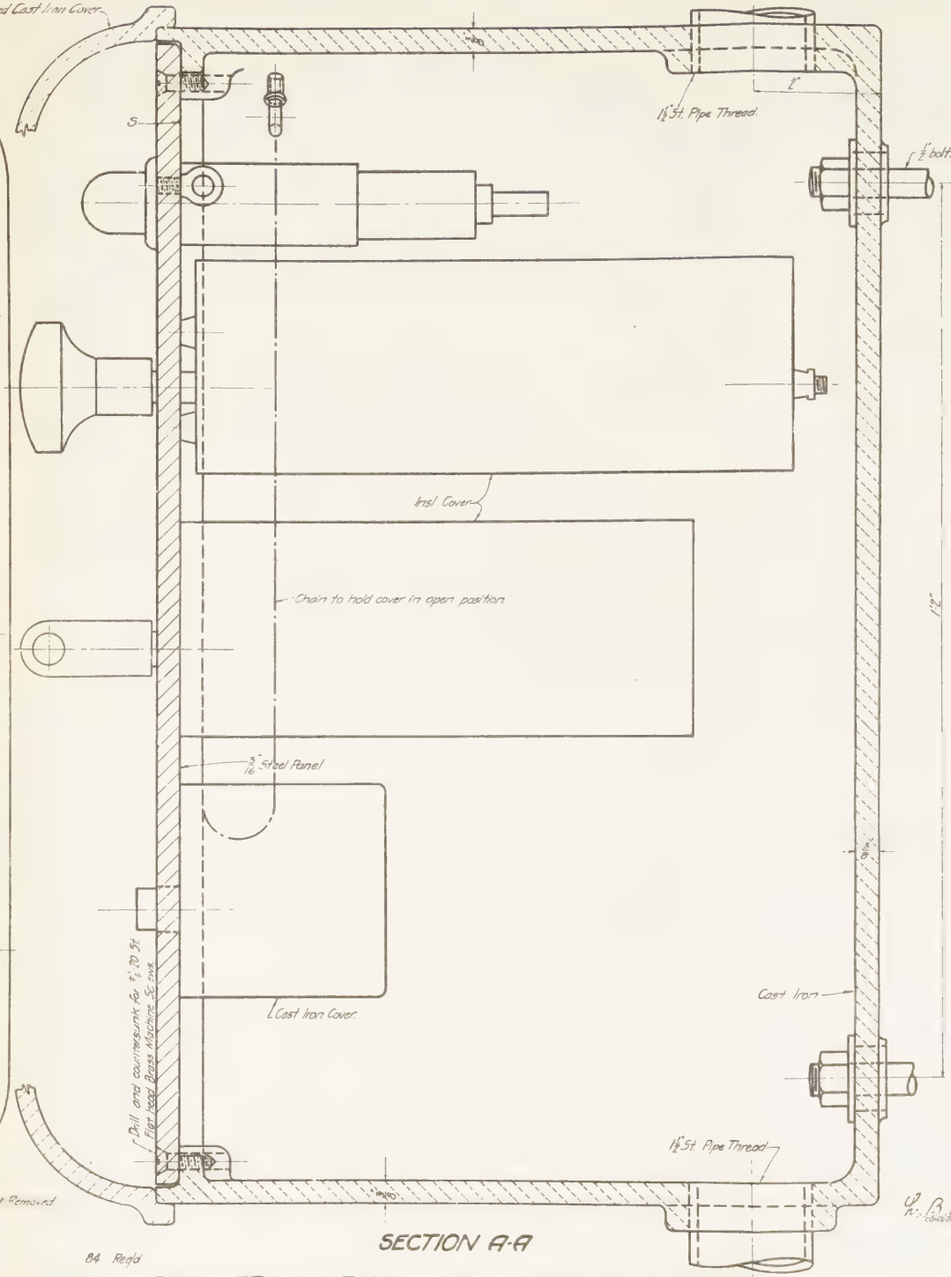
SCALE: 0 INCHES DATE MAY 18, 1926.

Ole Singstad
CHIEF ENGINEER

FILE NO. 1-18

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.




Hinged Cast Iron Cover
1½" St. Pipe Thread
½" bolts to be supplied
Insl. Cover
Chain to hold cover in open position
3/16" Steel Panel
Cast Iron Cover
Cast Iron
Drill and countersink for ¼" 20 St. Flat Head Brass Machine Screws
1½" St. Pipe Thread
Cover Removed
84 Reqd

SECTION A-A

TYPE A
60 Required

TYPE B
24 Required

Notes:
Box to be cast iron, panel to be steel plate.
Surfaces marked "S" to be free of burns and projections, and to be ground if necessary.
All ⅛" tapped holes to be drilled to template, and threads to be clean and sharp.
Cover screws, eye bolts and chain to be brass.
Control wiring inside of box to be supported on insulating cleats.
All wire connections shall be taped and separated from ground by means of fibre sheets 1/16" thick.

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 20

M. B. Stillwell
CONSULTING ENGINEER

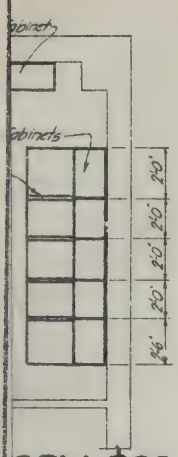
SCALE 1" = 1 INCHES DATE MAY 18 1926

Ole Singstad
CHIEF ENGINEER

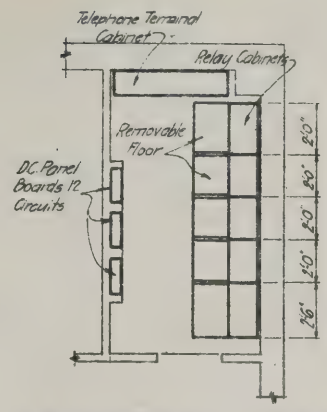
FILE NO. 1-8

LOCAL CONTROL BOX FOR FAN MOTORS

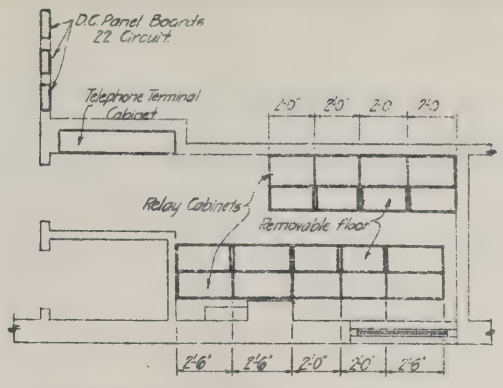
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



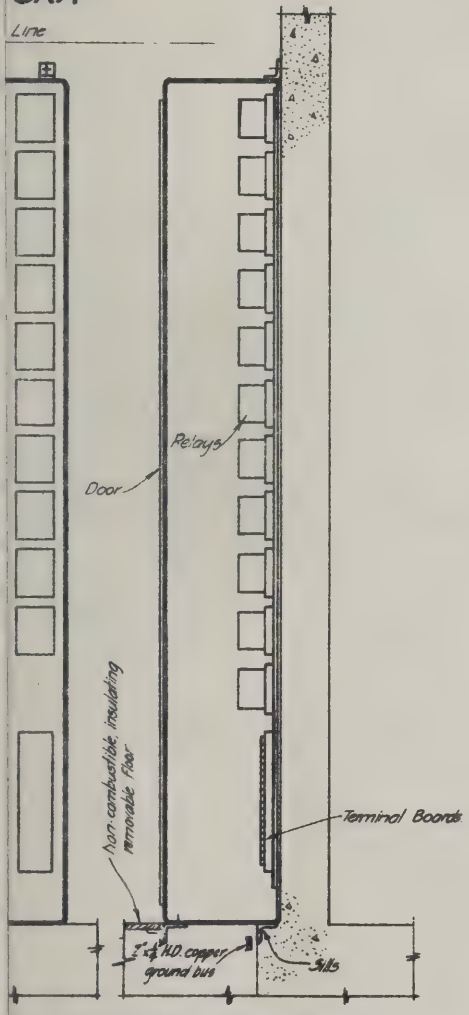
ORY ROOM
ENT B'LD'G.
YORK



SUPERVISORY ROOM
RIVER VENT. B'LD'G.
NEW JERSEY



SUPERVISORY ROOM
LAND VENT. B'LD'G.
NEW JERSEY



AL RELAY CABINET
Not to Scale.

For Location Plan, Land Vent. B'ld'g. N.Y. see Contr. Dwg. #4, File #1-19
For Location Plan Land Vent B'ld'g N.J. " " " #5 " #1-19
For Location Plan River Vent B'ld'g N.Y. " " " #6 " #1-19
For Location Plan River Vent B'ld'g N.J. " " " #7 " #1-19

G. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 21

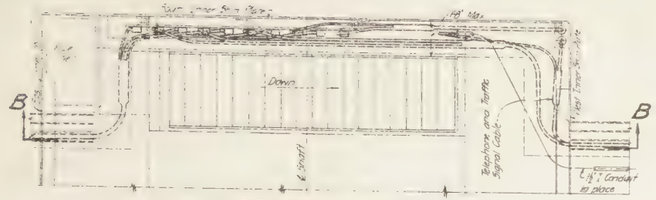
SCALE: 0 1 2 3 4 5 FEET
0 1 2 3 FEET

DATE MAY 18, 1926

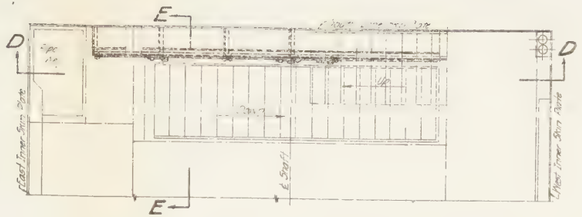
Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

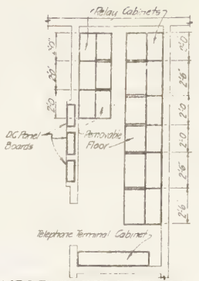
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



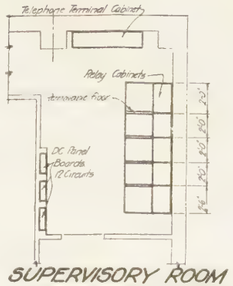
SECTION A-A



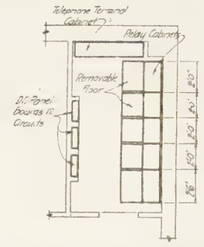
SECTION C-C



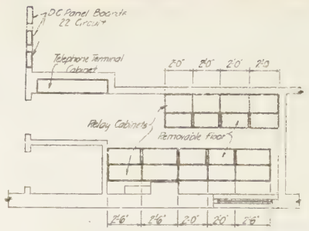
SUPERVISORY ROOM LAND VENT. BL'D'G. NEW YORK



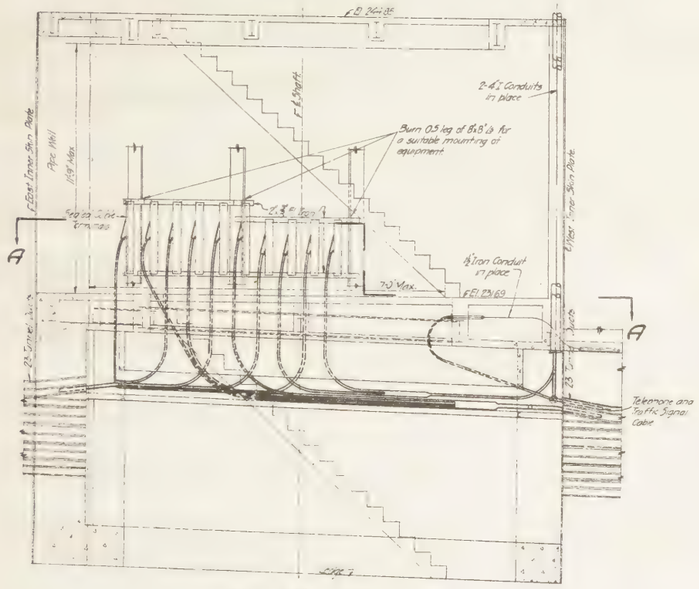
SUPERVISORY ROOM RIVER VENT. BL'D'G. NEW YORK



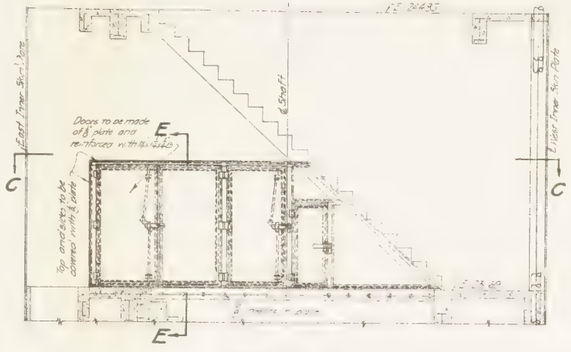
SUPERVISORY ROOM RIVER VENT. BL'D'G. NEW JERSEY



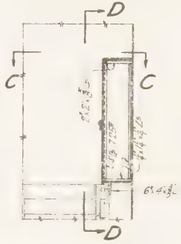
SUPERVISORY ROOM LAND VENT. BL'D'G. NEW JERSEY


A
A
2-4" I. Conduits in place
Burn 0.5 leg of 8x8 L's for a suitable mounting of equipment
4" Iron Conduit in place
Telephone and Traffic Signal Cable

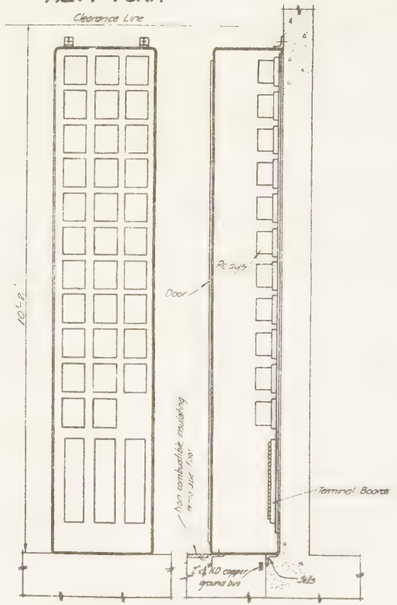
SECTION B-B



SECTION D-D



SECTION E-E



TYPICAL RELAY CABINET
Not to Scale

SOUTH RIVER SHAFT, NEW YORK

For Location Plan Land Vent Bldg N.Y. see Contr. Dwg #4 File #1-19
For Location Plan Land Vent Bldg N.J. ..... #5 ... #1-19
For Location Plan River Vent Bldg N.Y. ..... #6 ... #1-19
For Location Plan River Vent Bldg N.J. ..... #7 ... #1-19

INSTALLATION OF SUPERVISORY RELAYS AND TELEPHONE CABLE TERMINALS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 21

SCALE: FEET

DATE: MAY 18, 1920

CHIEF ENGINEER

FILE NO. -19

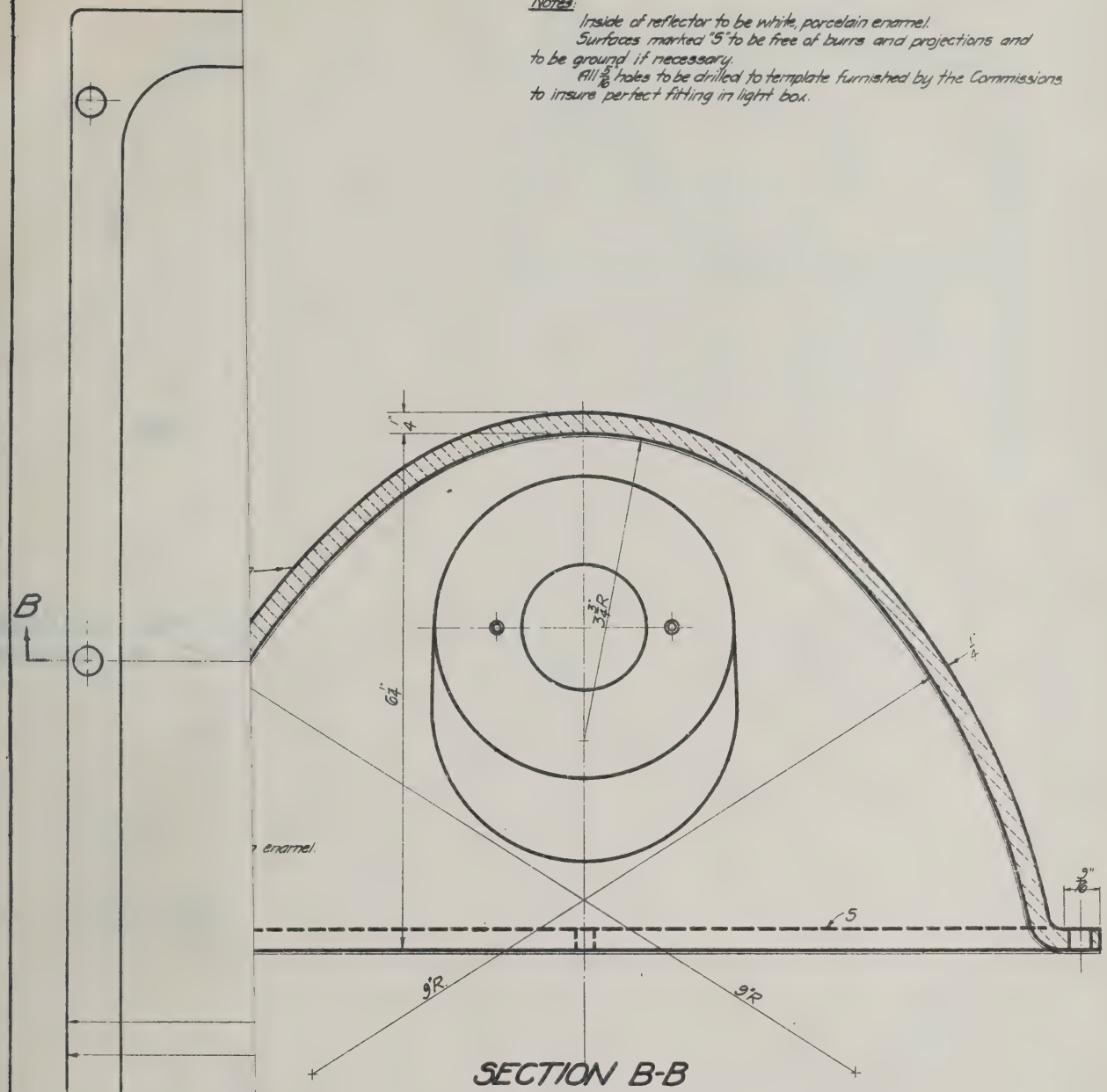
M. B. Brown Printing & Binding Co.

Notes:

Inside of reflector to be white, porcelain enamel.

Surfaces marked "5" to be free of burrs and projections and to be ground if necessary.

All $\frac{5}{16}$ holes to be drilled to template furnished by the Commissions to insure perfect fitting in light box.



SECTION B-B

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19
CONTRACT DRAWING No. 22

L. B. Stillwell
CONSULTING ENGINEER

SCALE: 0 1 2 INCHES DATE MAY 18, 1926

Ole Singstad
CHIEF ENGINEER

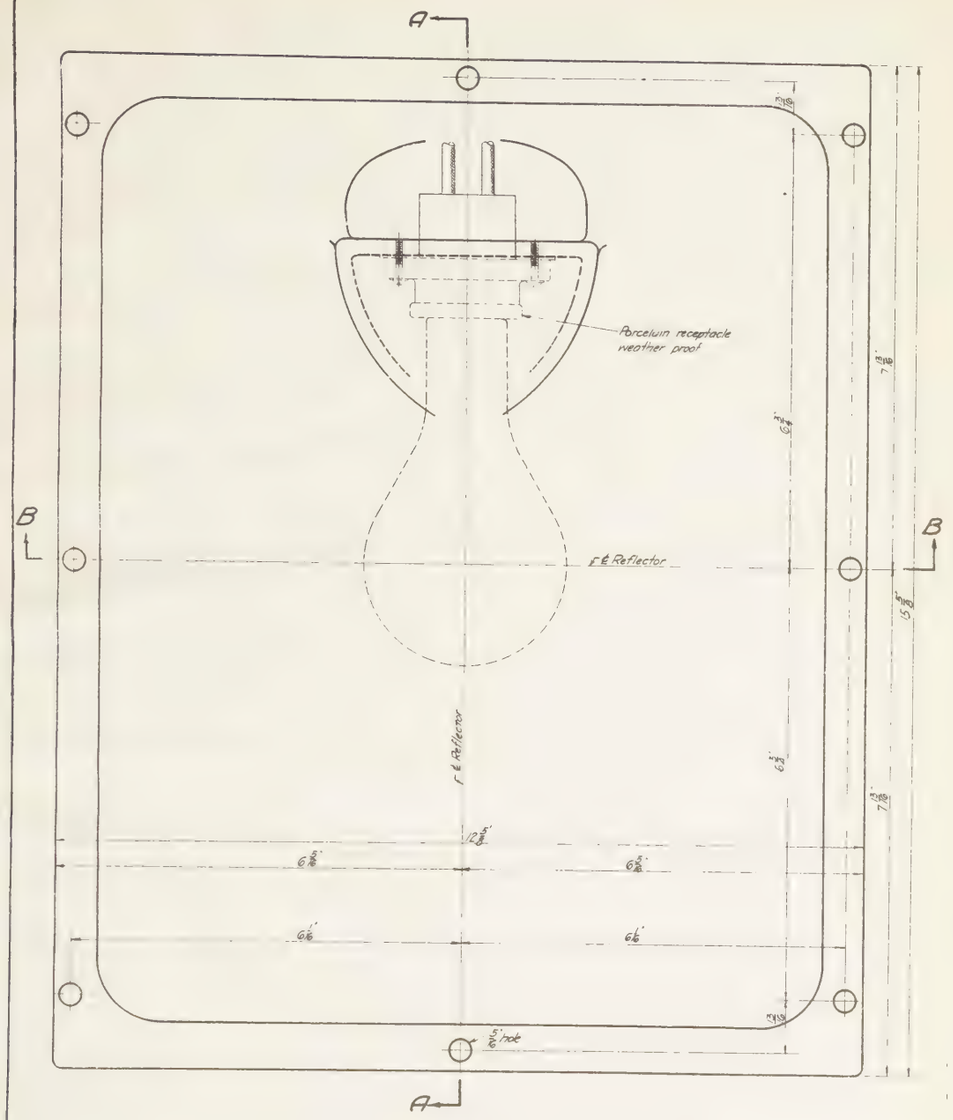
DRAWN BY [illegible]
CHECKED BY [illegible]
ENGINEER

FILE NO 119

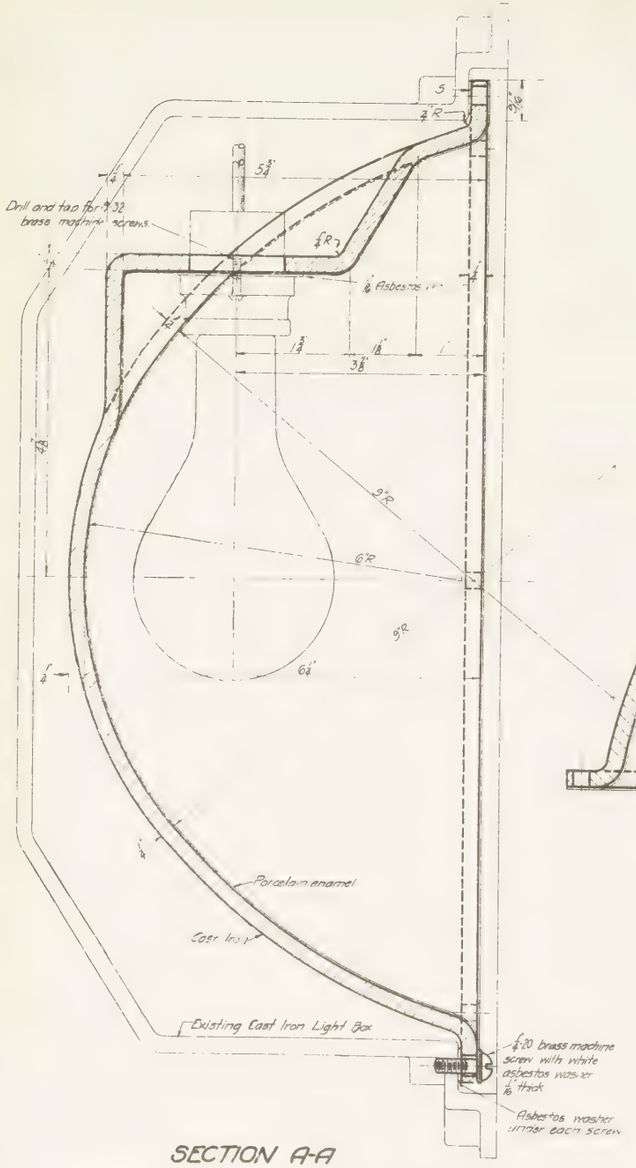
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

Notes

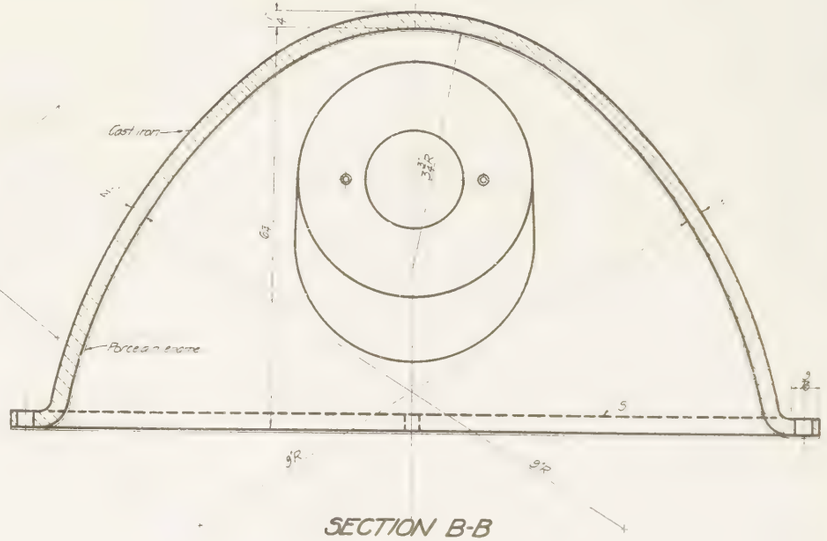
Inside of reflector to be white porcelain enamel.
Surfaces marked "S" to be free of burrs and projections and to be ground if necessary.
All $\frac{5}{8}$" holes to be drilled to template furnished by the Commissions to insure perfect fitting in light box.



REAR VIEW



SECTION A-A



SECTION B-B

REFLECTOR FOR TUNNEL LIGHT BOXES

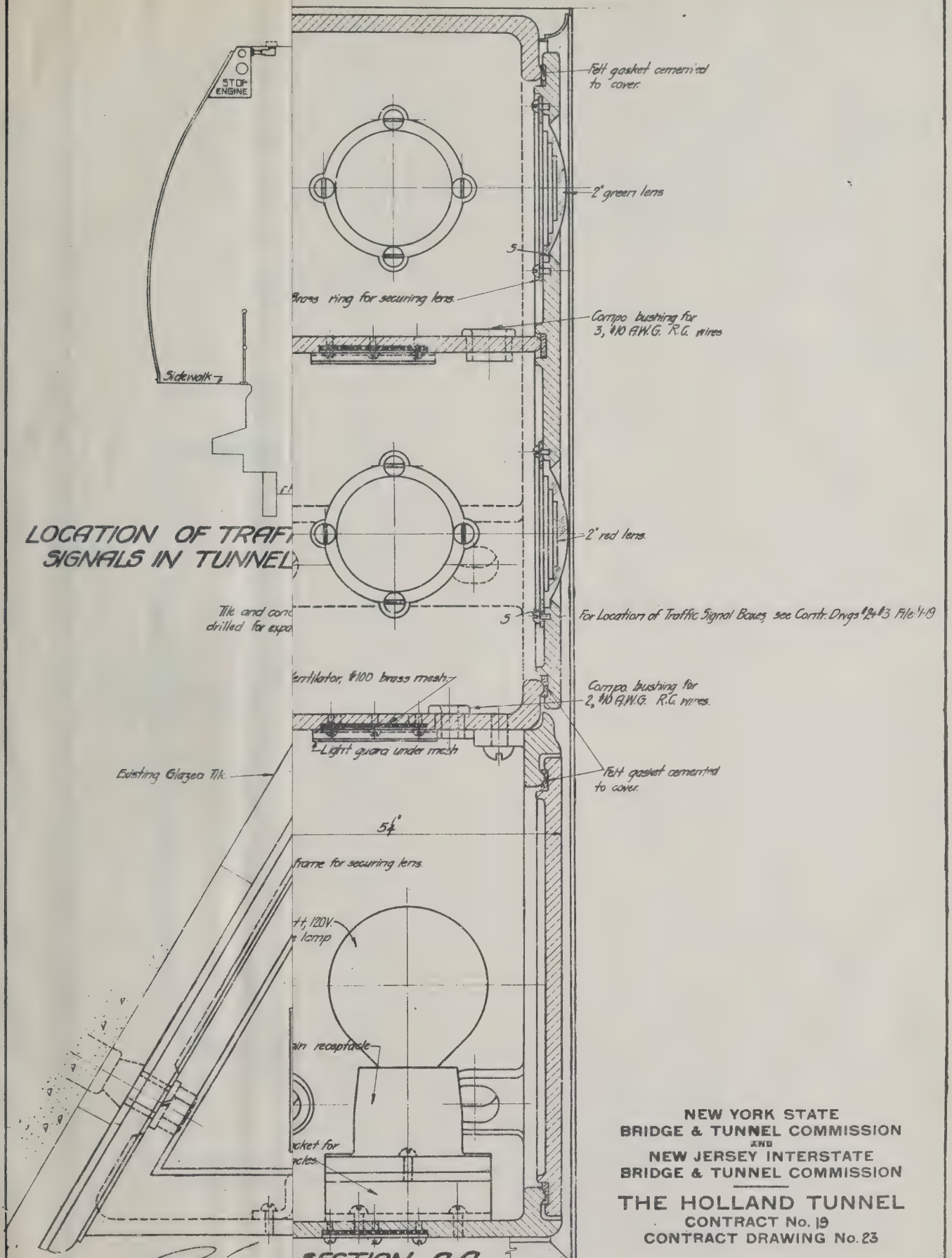
NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No 22

SCALE 0 1 2 INCHES DATE MAY 18 1926

FILE NO 19

M. B. Brown Printing & Binding Co.,



LOCATION OF TRAFF
SIGNALS IN TUNNEL

Tile and conc
drilled for expa

SECTION A-A

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 23

Ralph Smith
ENGINEER OF DESIGNS

O. H. Ladd
ELECTRICAL ENGINEER

DRAWN BY L. L. M.
CHECKED BY A.

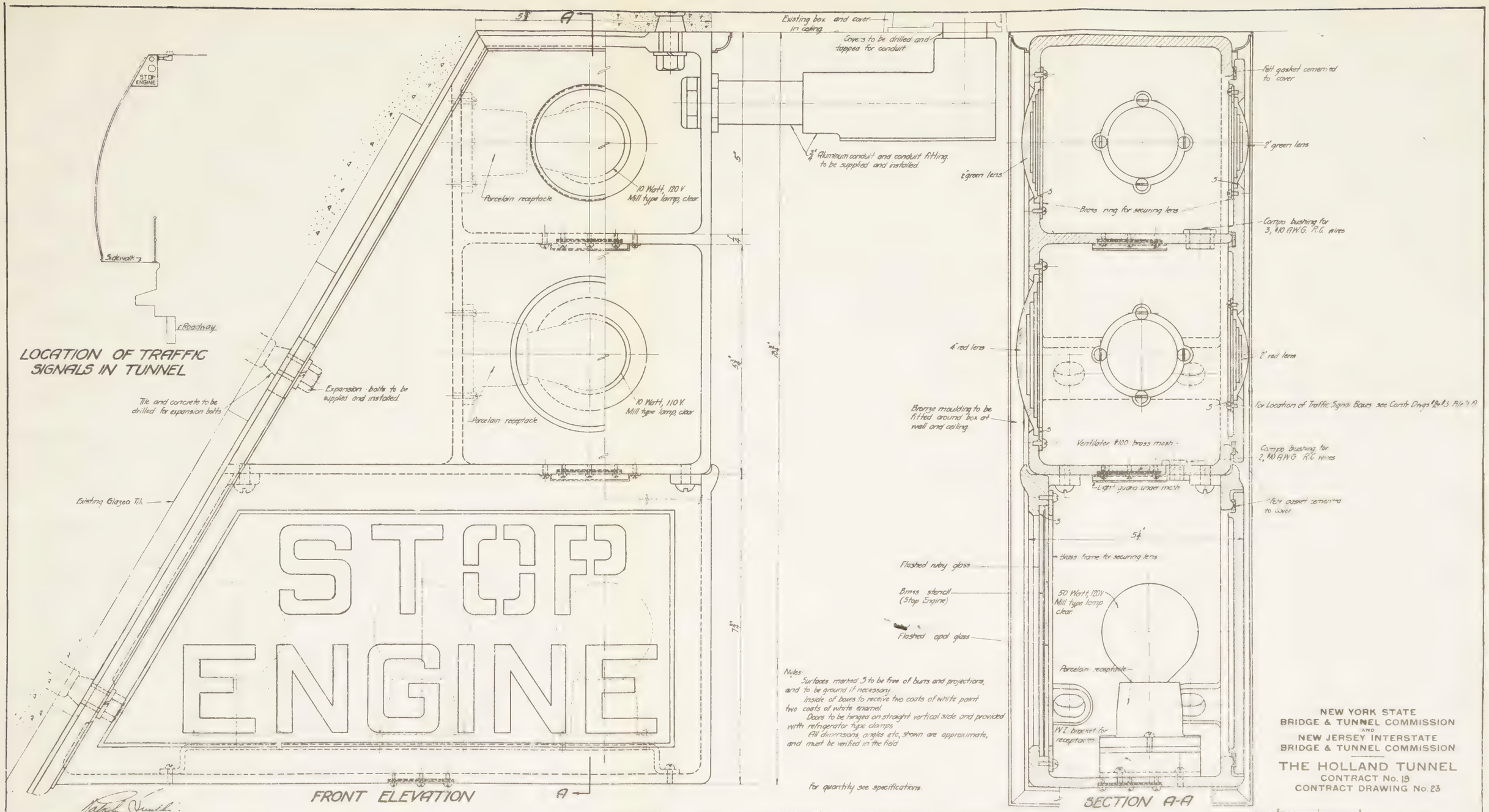
SCALE 1 INCH DATE MAY 18, 1926

L. B. Stillwell
CONSULTING ENGINEER

Ole Singstad
CHIEF ENGINEER

FILE NO. 19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.


STOP ENGINE
Sidewalk
Roadway
LOCATION OF TRAFFIC SIGNALS IN TUNNEL
Tile and concrete to be drilled for expansion bolts
Expansion bolts to be supplied and installed.
Existing Glazed Tile
Porcelain receptacle
10 Watt, 120 V. Mill type lamp, clear
Porcelain receptacle
10 Watt, 110 V. Mill type lamp, clear
STOP ENGINE
FRONT ELEVATION
Existing box and cover in ceiling
Covers to be drilled and tapped for conduit
3/4" Aluminum conduit and conduit fitting to be supplied and installed
2" green lens
4" red lens
Bronze moulding to be fitted around box at wall and ceiling
Flashed ruby glass
Brass stencil (Stop Engine)
Flashed opal glass
Notes:
Surfaces marked S to be free of burrs and projections, and to be ground if necessary.
Inside of Boxes to receive two coats of white paint two coats of white enamel.
Doors to be hinged on straight vertical side and provided with refrigerator type clamps.
All dimensions, angles etc. shown are approximate, and must be verified in the field.
For quantity see specifications.
Felt gasket cemented to cover
2" green lens
Brass ring for securing lens
Compo bushing for 3, #10 A.W.G. R.C. wires
4" red lens
2" red lens
For Location of Traffic Signal Boxes, see Contr. Drwgs. #2 & #3. File #19
Ventilator #100 brass mesh
Compo bushing for 2, #8 A.W.G. R.C. wires
Light guard under mesh
Felt gasket cemented to cover
Brass frame for securing lens
50 Watt, 120 V. Mill type lamp clear.
Porcelain receptacle
W.I. bracket for receptacles
SECTION A-A

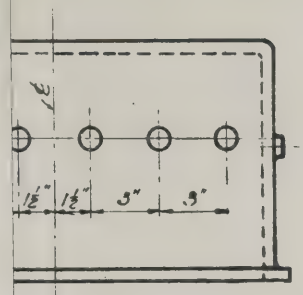
BOXES FOR TUNNEL TRAFFIC SIGNALS

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

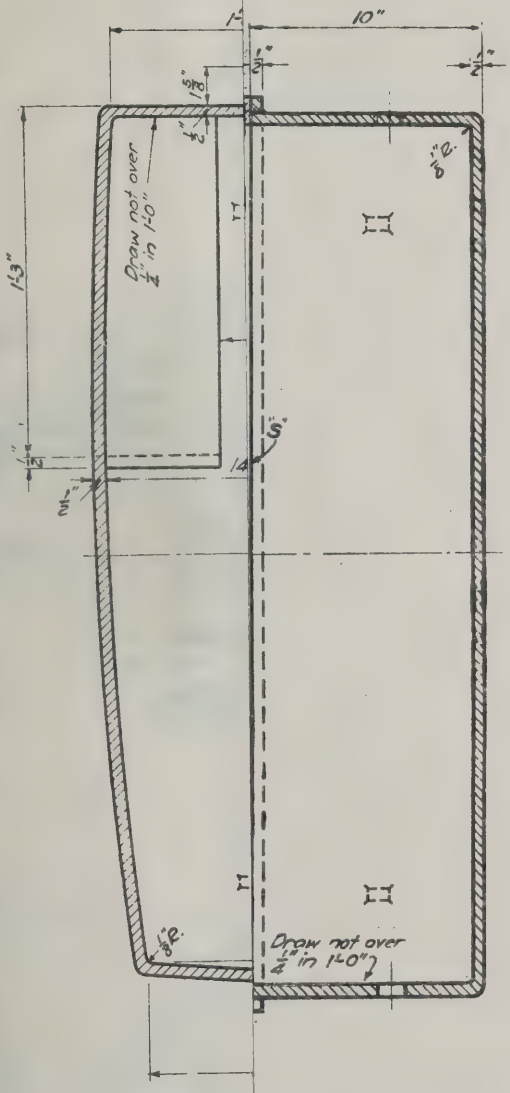
THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 23

ELECTRICAL ENGINEER
DRAWN BY
CHECKED BY
ENGINEER OF DESIGN
CONSULTING ENGINEER
CHIEF ENGINEER
SCALE INCHES
DATE MAY 18, 1932.

M. B. Brown Printing & Binding Co.,
47-61 Chambers Street, N. Y.



VIEW OF
E "B" BOX



SECTION D-D

For Location of Existing Relay Boxes, see Contract Dwgs. #2 & #3, File #1-19

L. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 24

SCALE: 0 1 2 3 INCHES.

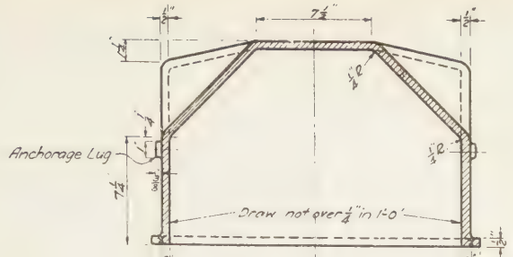
DATE MAY 18, 1926.

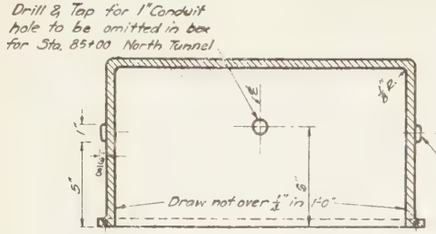
Ole Singstad
CHIEF ENGINEER

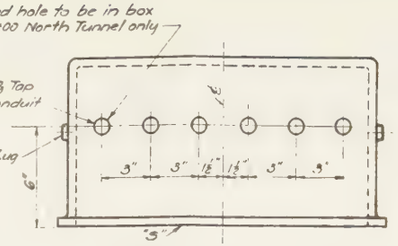
DRAWN BY
CHECKED BY

FILE NO. 1-19

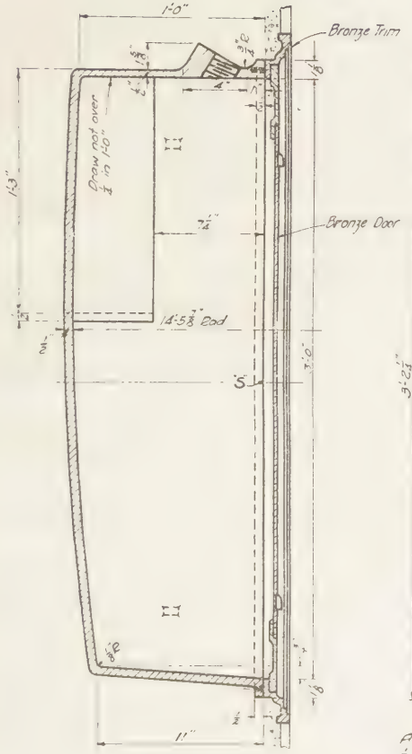
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



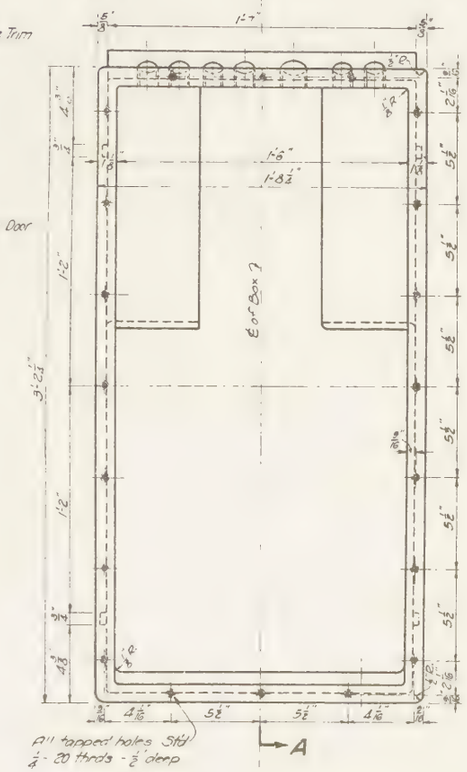




TOP VIEW OF TYPE "B" BOX

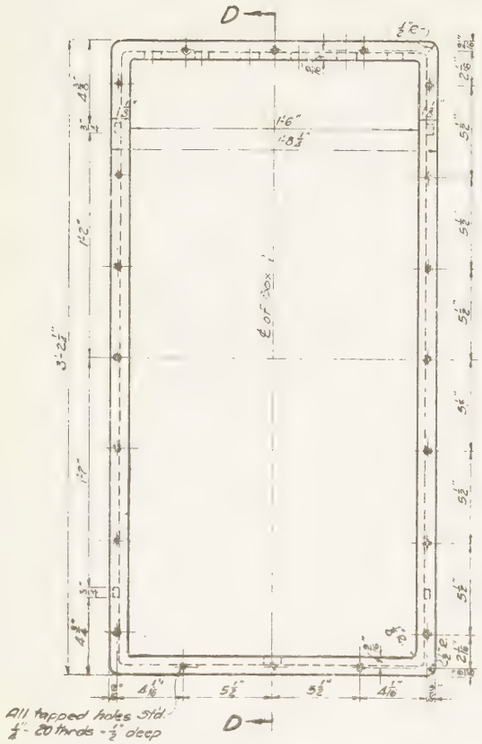


SECTION A-A

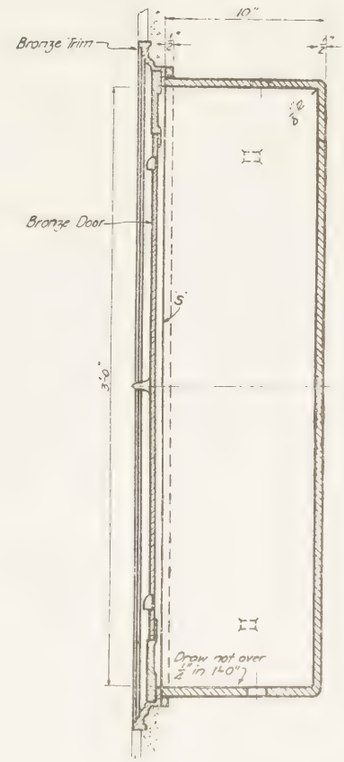


FRONT ELEVATION

RELAY BOX TYPE "A"



FRONT ELEVATION



SECTION D-D

RELAY BOX TYPE "B"

For Location of Existing Relay Boxes, see Contract Dwgs # 24-3, Plate 19

EXISTING RELAY BOXES NOW IN PLACE

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 24

SCALE: 0 1 2 3 INCHES. DATE MAY 18, 1926

Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

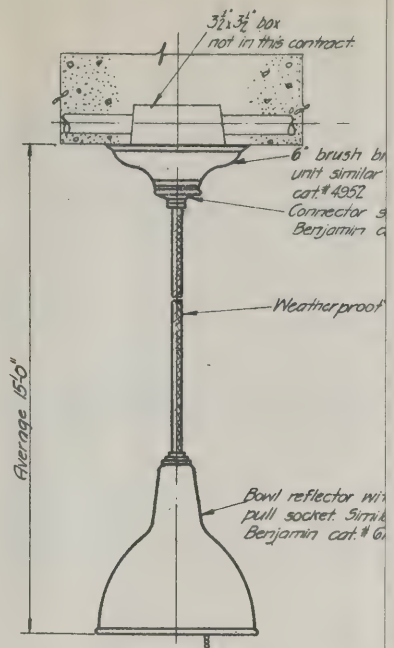
DRAWN BY
CHECKED BY

J. N. Hardesty
ELECTRICAL ENGINEER

ENGINEER OF DESIGN

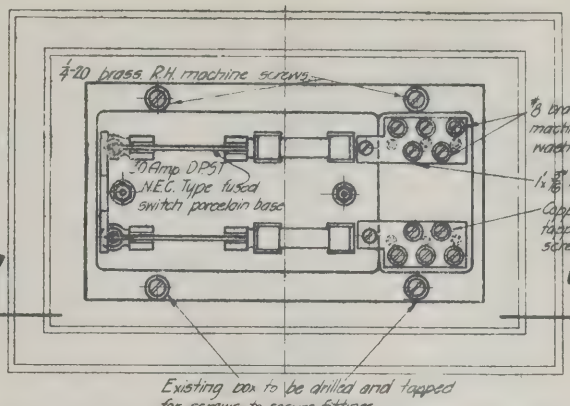
L. B. Stillwell
CONSULTING ENGINEER

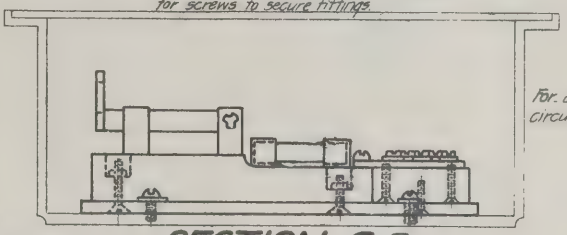
M. B. Brown Printing & Binding Co.,
17-41 Chambers Street, N. Y.



MARK D

Over fan bearings and motors.


4-20 brass R.H. machine screws
⅜ brass countersunk machine screw and washer
30 Amp D.P.S.T. N.E.C. Type fused switch porcelain base
1 x ⅛ flat copper.
Copper strap to be tapped for connect. screws
A
A
Existing box to be drilled and tapped for screws to secure fittings.

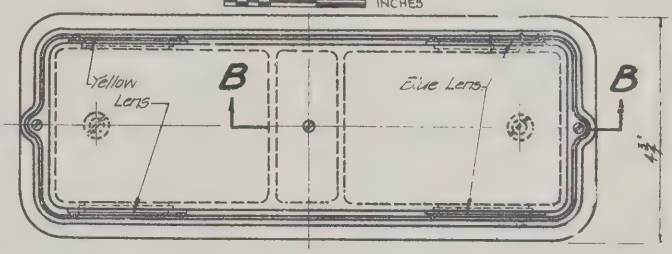


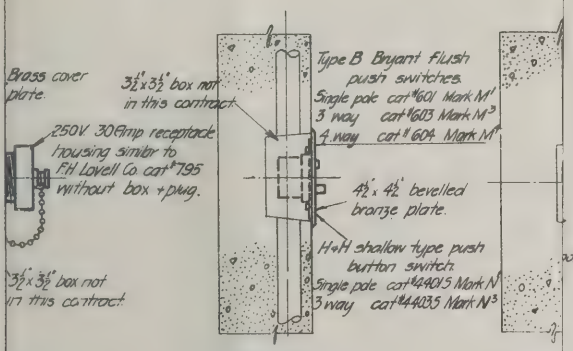
SECTION A-A

MARK S

300 Req'd

INCHES



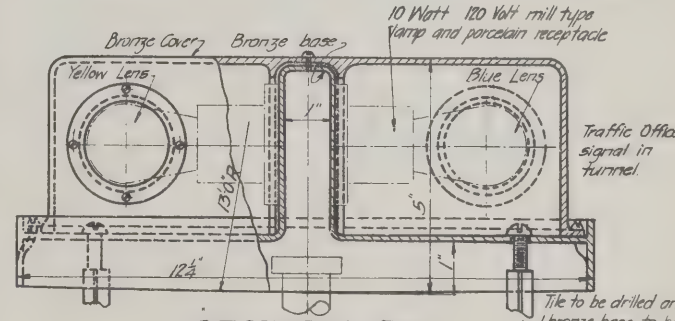

Brass cover plate.
3½ x 3½" box not in this contract.
250V. 30 Amp receptacle housing similar to F.H. Lovell Co. cat.# 795 without box + plug.
3½ x 3½" box not in this contract.
Type B Bryant flush push switches.
Single pole cat.# 601 Mark M¹
3 way cat.# 603 Mark M³
4 way cat.# 604 Mark M⁴
4½ x 4½" bevelled bronze plate.
H+H shallow type push button switch.
Single pole cat.# 44015 Mark N
3 way cat.# 44035 Mark N³

MARK M

For use in 3½ x 3½ x 2" outlet boxes.

MARK N

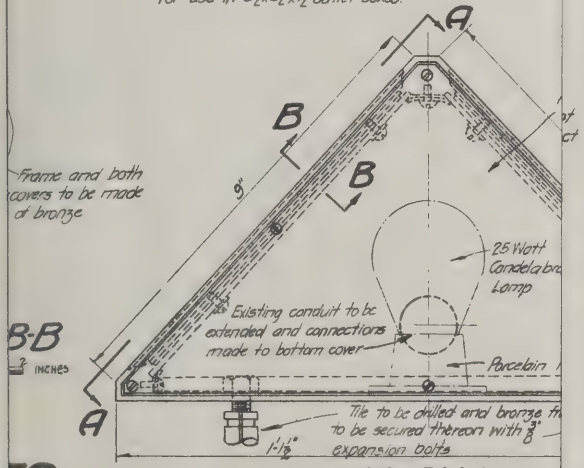
For use in 3½ x 3½ x 1½" outlet boxes.



SECTION B-B

MARK T

INCHES.



MARK X

For exit lights in tunnel.

INCHES

Lovell

ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL

CONTRACT No. 19

CONTRACT DRAWING No. 25

SCALE: 0 1 2 3 4 INCHES
EXCEPT AS SHOWN

DATE MAY 18, 1926

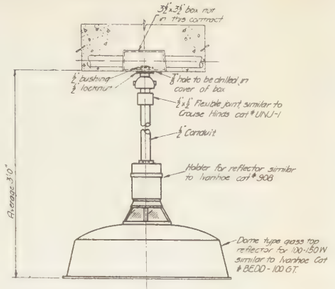
CHIEF ENGINEER

FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

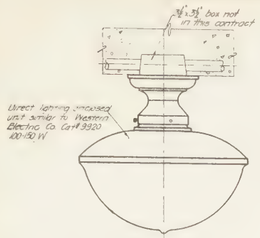
MARK U

Walls bracket for N.Y. & N.J. Portals


3½x3½ box not in this contract
½ pushing locknut
Hole to be drilled in cover of box
½ Flexible joint similar to Crouse Hinds cat # UNJ-1
½ Conduit
Holder for reflector similar to Ivanhoe cat # 308
Dome type glass top reflector for 100-150 W similar to Ivanhoe Cat # DECO-100 GT
Average 10'-0"

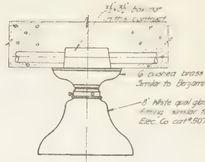
MARK A

For general illumination in all floors, emergency exits, fan exhaust chambers and emergency exit passageways at N.J. Land Shafts except where concrete is cut away, as Mark E



MARK B

For Control Rooms + Offices

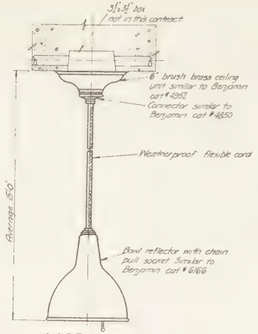

3½x3½ box not in this contract
½ bushed brass ceiling unit similar to Benjamin cat # 4905
8" White opal glass shade, 2¼ fitting similar to Western Elec. Co. cat # 5070. For 50-60 W

MARK C-8

Toilet + locker rooms and New Jersey Shafts over roadway

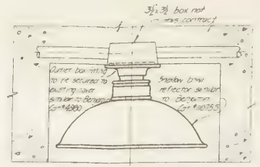
MARK C-6

For ceiling lights on stairways with 6" white opal shade similar to Western Elec. Co cat # 5068


3½x3½ box not in this contract
6" brush brass ceiling unit similar to Benjamin cat # 4952
Connector similar to Benjamin cat # 4850
Weatherproof flexible cord
Bowl reflector with chain pull socket. Similar to Benjamin cat # 6068
Average 8'-0"

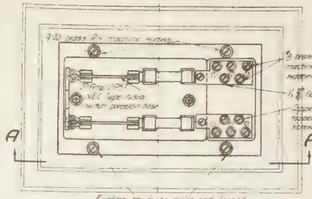
MARK D

Over fan bearings and motors.


3½x3½ box not in this contract
Outlet box with ½ pipe returned to mounting lugs similar to Benjamin cat # 4880
Shallow brass reflector similar to Dickerson cat # 4855

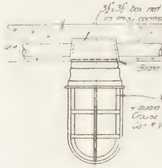
MARK E

For niches in ceilings of stairways and emergency exits.


4-40 brass R.H. machine screws
½ brass concealed machine screw and nut type
¼" fort corner
Upper strap to be tapped for conduit stems
A
A
Existing box to be drilled and tapped for stems to secure fittings
For Skarnick lighting circuits — Runner.

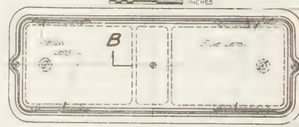
SECTION A-A

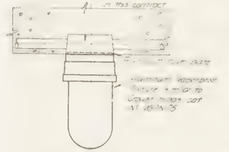
MARK S



MARK H

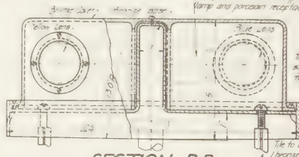
For ceiling lights in exhaust fan cubicles, ceiling lamp rooms and stairways





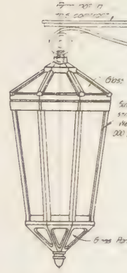
MARK J

For all battery rooms except N.Y. River Ventilation Bldg.


Amber Light
Glass Lens
Blue Lens
10 Watt 110 Volt mill type lamp and porcelain receptacle
Traffic Officers signal on Tunnel
Tile to be drilled and bronze base to be securely fastened thereon with ⅜" expansion bolts

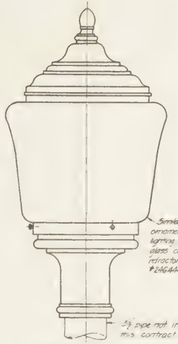
SECTION B-B

MARK T


Glass not in this contract
Glass Pane
Similar to ornamental street lighting unit Westinghouse cat 200 W cat # 130339
Brass Pane

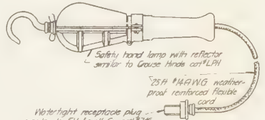
MARK V

For New York Plaza


Similar to 18 Novalux ornamental street lighting unit with glass canopy + dome reflector Cen. Elec. Co. cat # 246444
½ pipe not in this contract

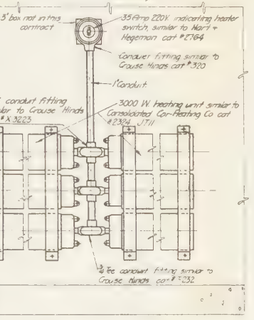
MARK W

For New Jersey Plaza


Safety hand lamp with reflector similar to Crouse Hinds cat # LFH
25 ft # 14 AWG weatherproof reinforced flexible cord
Watertight receptacle plug similar to FH Lovell Co. cat # 326. To fit receptacle Mark L

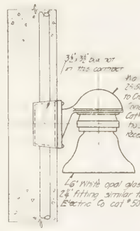
MARK R

All buildings


4'-4'x3' box not in this contract
.35 Amp 220 V. indicating heater switch similar to Mart + Hegeman cat # 2764
Conduit fitting similar to Crouse Hinds cat # 320
¾ Conduit
1" X ¾ conduit fitting similar to Crouse Hinds cat # X 3023
3000 W. heating unit similar to Consolidated Car-Heating Co. cat # 2302 L 171
¾ to 1" conduit fitting similar to Crouse Hinds cat # T 352

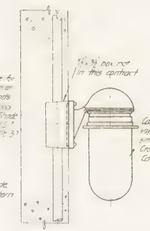
MARK Q

Heaters in River Vent. Buildings


3½x3½ box not in this contract
Wall fixture to 250 W. similar to Crouse Hinds Compact 7000 Cat # 304 Trade type GE-1 Reactance to 3
4½" White opal glass shade, 2¼ fitting similar to Western Electric Co. cat # 5068

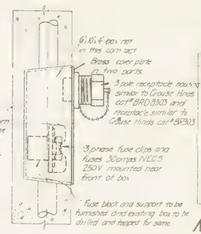
MARK F

For use on stairways and walls in all buildings



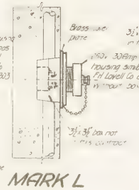
MARK G

For battery rooms in N.Y. River Ventilation Building.


4"x4"x1½" box not in this contract
Brass cover plate
3 pole receptacle housing similar to Crouse Hinds cat # BRD 3303 and receptacle similar to Crouse Hinds cat # 9033
3 phase fuse clips and fuses 30 amps N.E.C.D. 250 V. mounted near front of box
Fuse block and support to be furnished and existing box to be drilled and tapped for same.

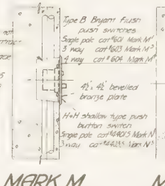
MARK K

For 220 V. 3 phase heater receptacles



MARK L

For all 3 pole receptacles


Type B Bryant flush push switches
Single pole cat # 601 Mark M
3 way cat # 604 Mark M
4 way cat # 608 Mark M
4½ x 4½ bevelled bronze plate
4-NH shallow type push button switch
Single pole cat # 4803 Mark N
3 way cat # 4804 Mark N

MARK M

For use in 3½-3½ outlet boxes

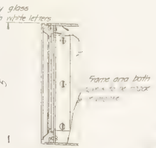
MARK N

For use in 3½-3½ outlet boxes

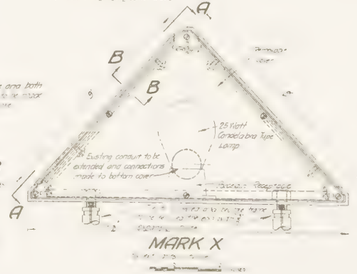
MARK O

Push button for door bells

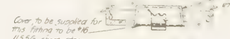
ELEVATION A-A



SECTION B-B



MARK X


Condolamp receptacle similar to Heston Electric Co. # 330 Bryant
Cover to be supplied for this fitting to be #16 U.S.S. sheet steel
3½x3½ box not in this contract

MARK P

LIGHTING AND HEATING FIXTURES

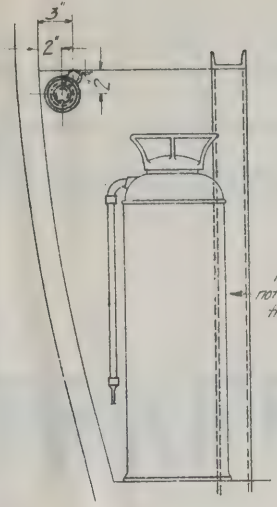
NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 25

DRAWN BY C.R.M.
CHECKED BY C.R.M.

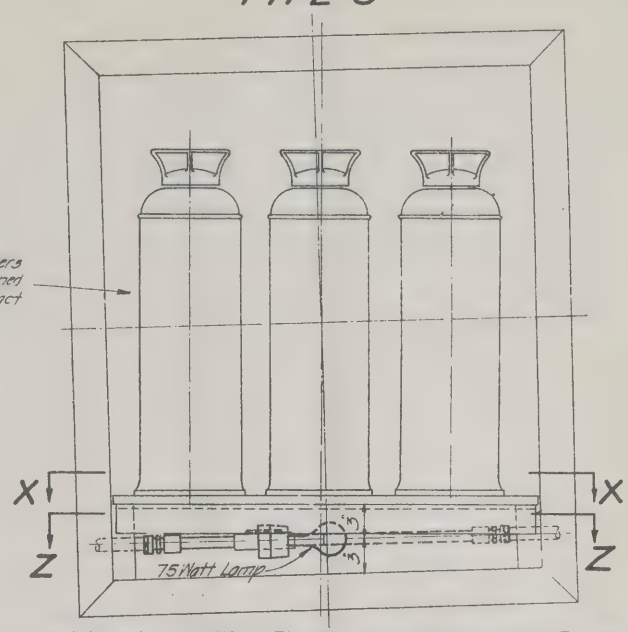
SCALE EXCEPT AS SHOWN

DATE MAY 18 1926



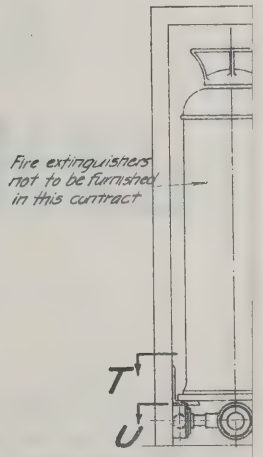
SECTION A-A

TYPE C

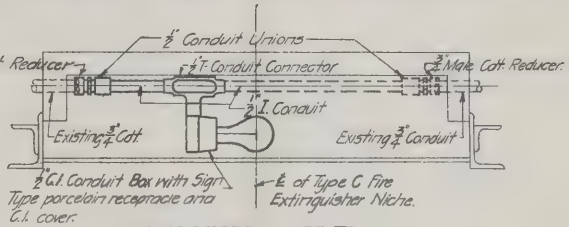


3 UNIT FIRE EXTINGUISHER NICHE IN STEEL BENT SECTION NEW JERSEY

TYPE



SINGLE UNIT FIRE EXTI
NICHE IN TUBE SEC


1/2" Conduit Unions
3/4" Male Cdt Reducer
1" T Conduit Connector
3/4" Male Cdt Reducer
3/4" I. Conduit
Existing 3/4" Cdt
Existing 3/4" Conduit
1/2" G.I. Conduit Box with Sign Type porcelain receptacle and C.I. cover.
℄ of Type C Fire Extinguisher Niche.

SECTION Z-Z

Where existing 3/4" conduits enter niche from the side.

Note:
Conduit, conduit fittings, lamps etc, shown in full lines to be installed in all fire extinguisher niches; conduit and conduit fittings shown in dotted lines to be installed only where 2 fire extinguisher niches are adjacent.

For location of fire extinguisher niches, see Contr. Drng. #2 & #3 File #1-19

Location	Type "A" F.E. Niche in Tube Section		Type "C" F.E. Niche in Steel Bent Section New York		Type Stee Ne
	Single	Double	Single	Double	Sing
North Tunnel	29	15	4	4	2
South Tunnel	29	18	4	5	1

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 26

SCALE: 0 3 6 9 12 INCHES DATE MAY 18, 1926

Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

DRAWN BY M.J.B.
CHECKED BY EC

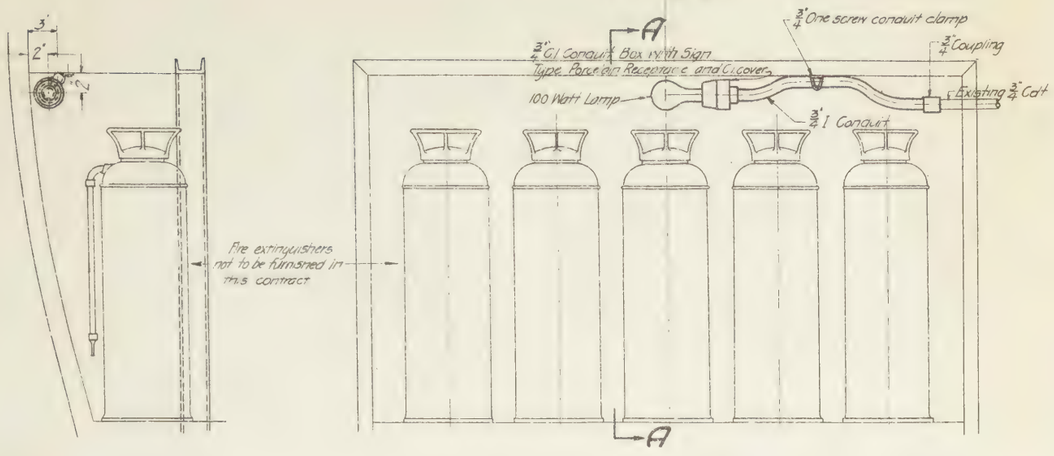
ENGINEER OF DESIGNS

ELECTRICAL E

Clwell
GINEER

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

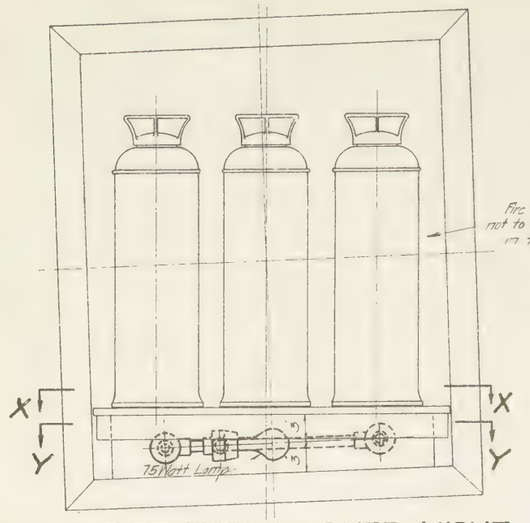
TYPE B



SECTION A-A

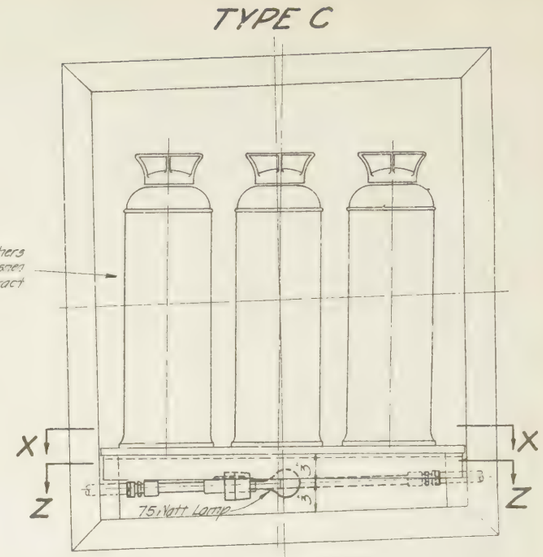
5 UNIT FIRE EXTINGUISHER NICHE IN TUBE SECTION

TYPE C

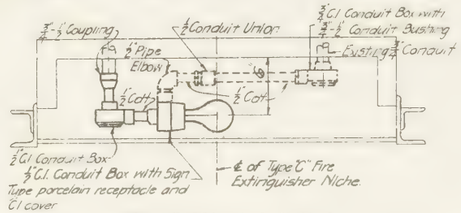


3 UNIT FIRE EXTINGUISHER NICHE IN STEEL BENT SECTION NEW YORK

TYPE C

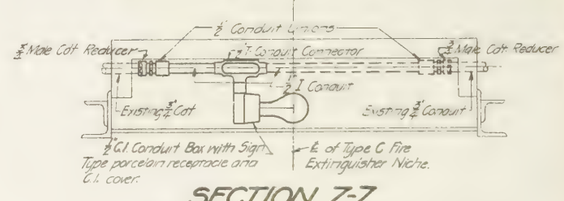


3 UNIT FIRE EXTINGUISHER NICHE IN STEEL BENT SECTION NEW JERSEY


¾" - ½" Coupling
½" Conduit Union
¾" G.I. Conduit Box with ¾" - ½" Conduit Bushing
½" Pipe Elbow
Existing ¾" Conduit
¾" Cat
½" Cat
½" G.I. Conduit Box
¾" G.I. Conduit Box with Sign Type porcelain receptacle and G.I. cover
℄ of Type "C" Fire Extinguisher Niche.

SECTION Y-Y

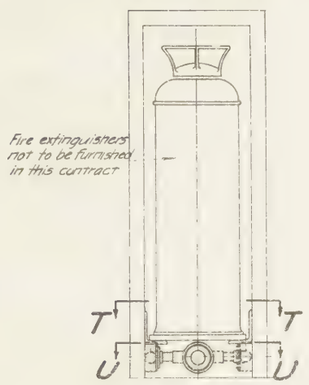
Where existing ¾" conduits enter niche from the back.


¾" Conduit Unions
¾ Male Cat Reducer
¾" T Conduit Connector
¾ Male Cat Reducer
¾" I Conduit
Existing ¾" Cat
Existing ¾" Conduit
¾" G.I. Conduit Box with Sign Type porcelain receptacle and G.I. cover.
℄ of Type C Fire Extinguisher Niche.

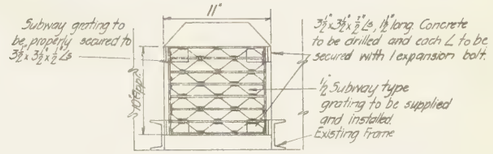
SECTION Z-Z

Where existing ¾" conduits enter niche from the side.

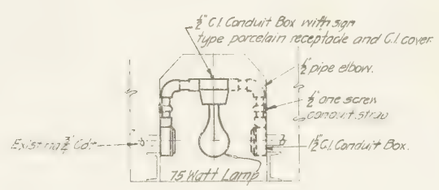
TYPE A



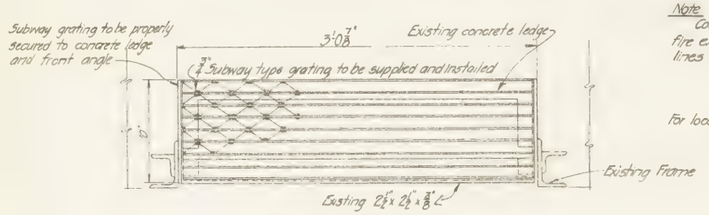
SINGLE UNIT FIRE EXTINGUISHER NICHE IN TUBE SECTION


Subway grating to be properly secured to 3½" x 3½" x ½" ∠'s
11"
10" Approx.
3½" x 3½" x ½" ∠s, 1'-8" long. Concrete to be drilled and each ∠ to be secured with 1 expansion bolt.
½" Subway type grating to be supplied and installed. Existing frame

SECTION T-T


½" G.I. Conduit Box with sign type porcelain receptacle and G.I. cover.
½" pipe elbow.
½" one screw conduit strap
½" G.I. Conduit Box.
Existing ½" Cat
75 Watt Lamp

SECTION U-U


Subway grating to be properly secured to concrete ledge and front angle
3'-0⅜"
Existing concrete ledge
¾" Subway type grating to be supplied and installed
Existing Frame
Existing 2½" x 2½" x ⅜" ∠

SECTION X-X

Location	Type "A" F.E. Niche in Tube Section		Type "C" F.E. Niche in Steel Bent Section New York		Type "C" F.E. Niche in Steel Bent Section New Jersey		Type "B" F.E. Niche in Tube Section	Type "C" F.E. Niche at N. Portal, N.Y.
	Single	Double	Single	Double	Single	Double		Double
North Tunnel	29	15	4	4	7	3	25	1
South Tunnel	29	18	4	5	1	2	30	

Note

Conduit, conduit fittings, lamps etc. shown in full lines to be installed in all fire extinguisher niches; conduit and conduit fittings shown in dotted lines to be installed only where 2 fire extinguisher niches are adjacent.

For location of fire extinguisher niches, see Contr. Drwg #2-#3 File #1-13

INSTALLATION OF EQUIPMENT IN TUNNEL
FIRE EXTINGUISHER NICHES

L. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

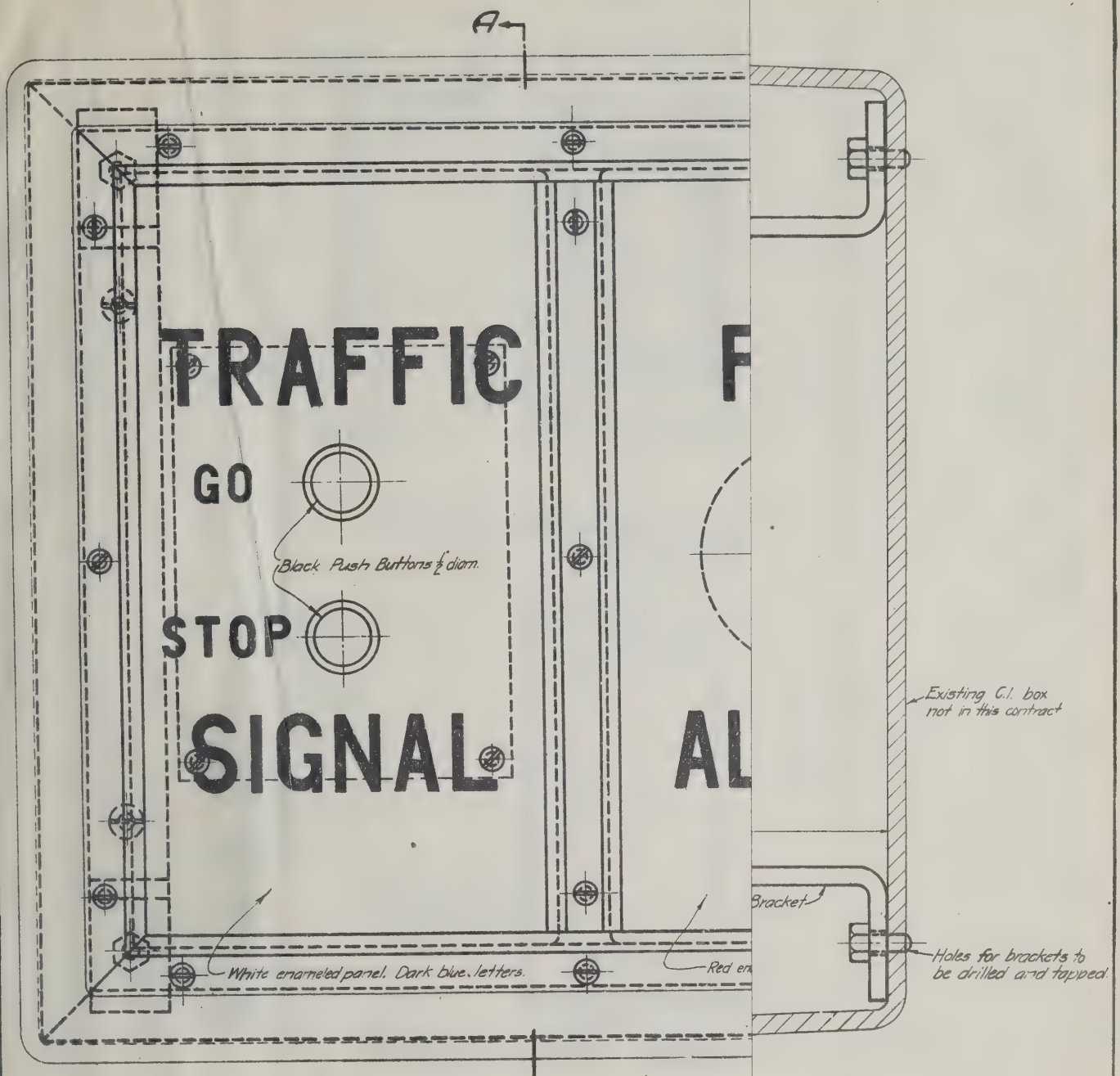
THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 26

SCALE: 0 1 2 3 4 INCHES DATE: MAY 18, 1926

Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



FRONT VIEW

NEW YORK STATE
RIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
RIDGE & TUNNEL COMMISSION

FIRE ALARM &

HE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 27

INCHES

DATE MAY 18, 1926

G. N. Dodd
ELECTRICAL ENGINEER

ENGINEER OF DESIGNS

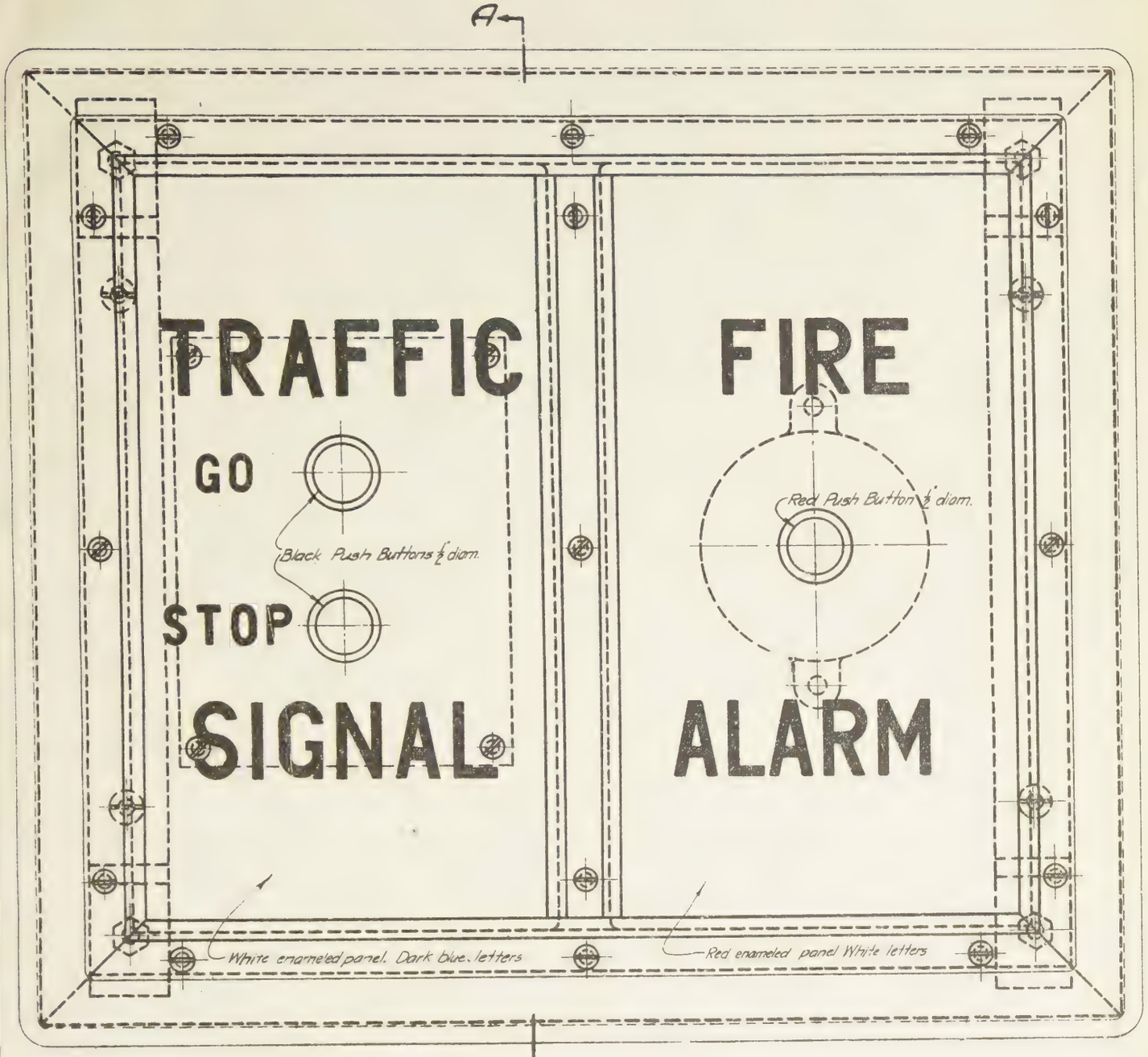
CHIEF ENGINEER

DRAWN BY

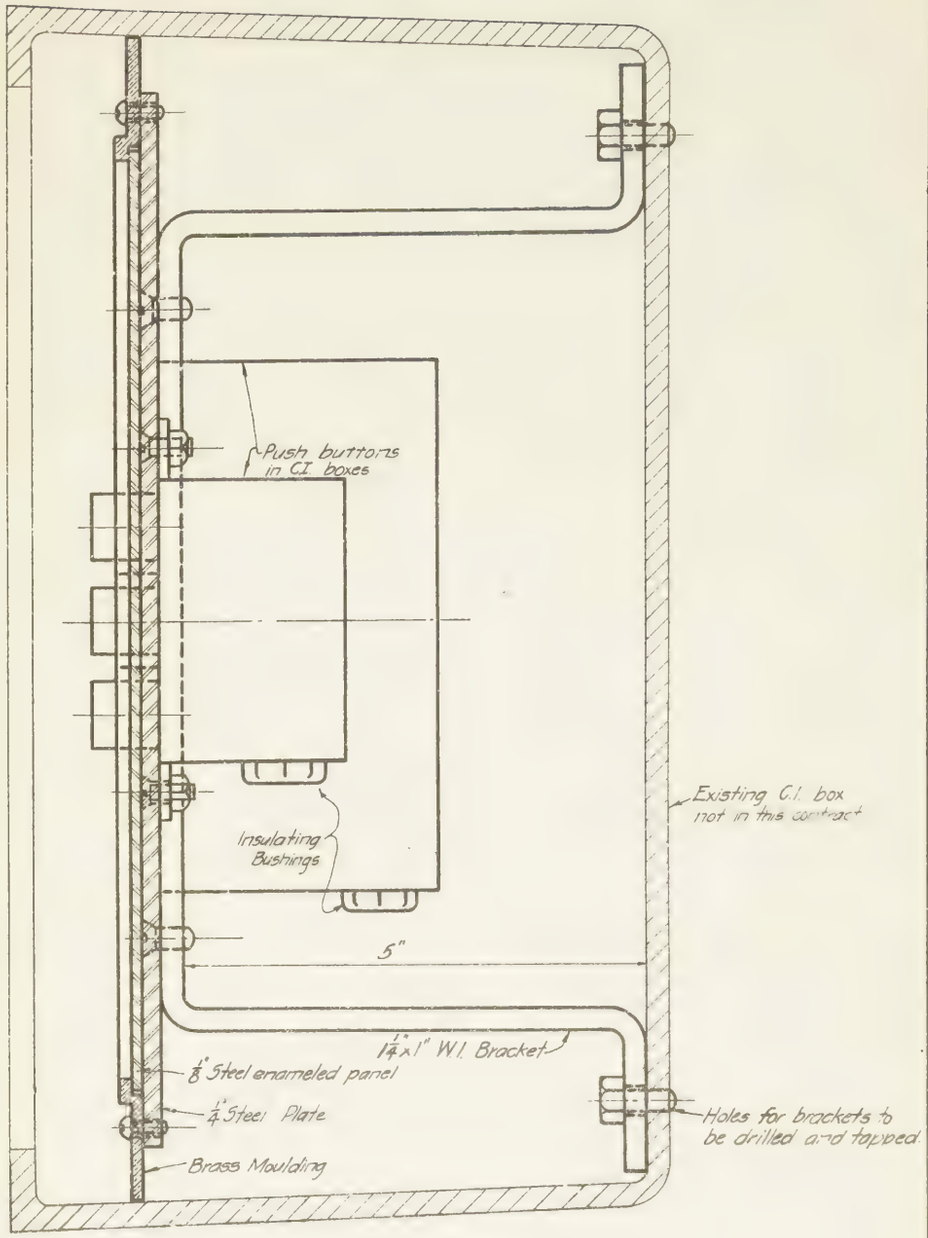
CHECKED BY

FILE NO. 1-19

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.



FRONT VIEW



SECTION A-A

For Location of Fire Alarm & Traffic Control Box, see Contract Dwgs #2 & #3, File #1-19

FIRE ALARM & TRAFFIC SIGNAL CONTROL BOX

L. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 27

SCALE: ——— INCHES DATE MAY 18, 1926

Ole Singstad
CHIEF ENGINEER

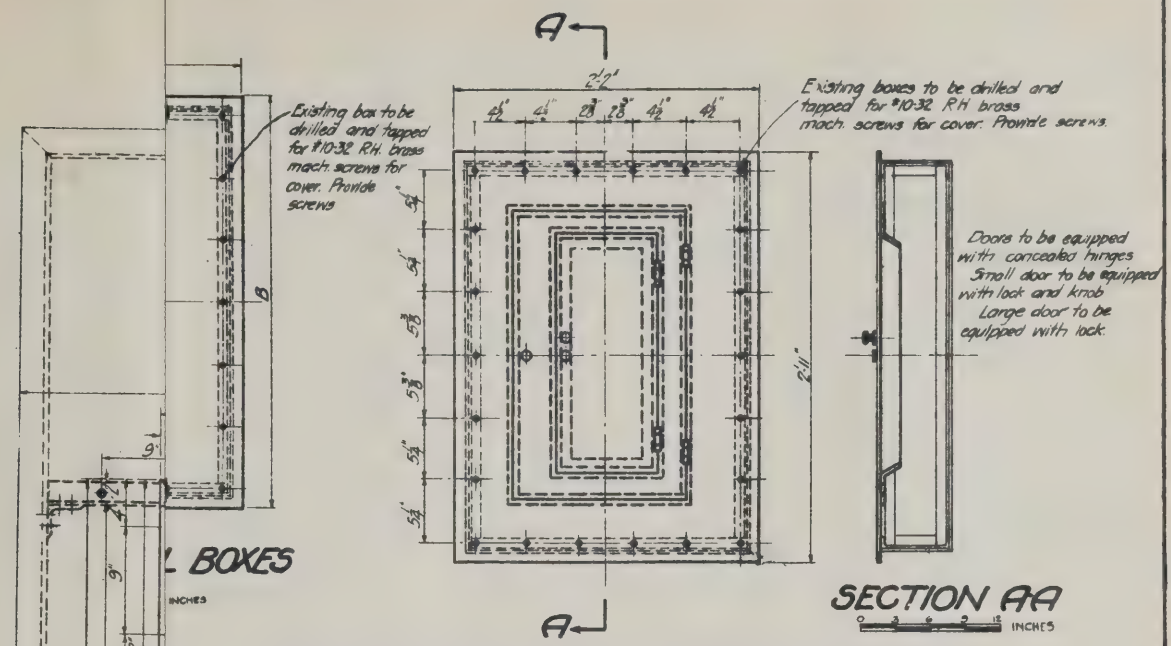
FILE NO. 1-19

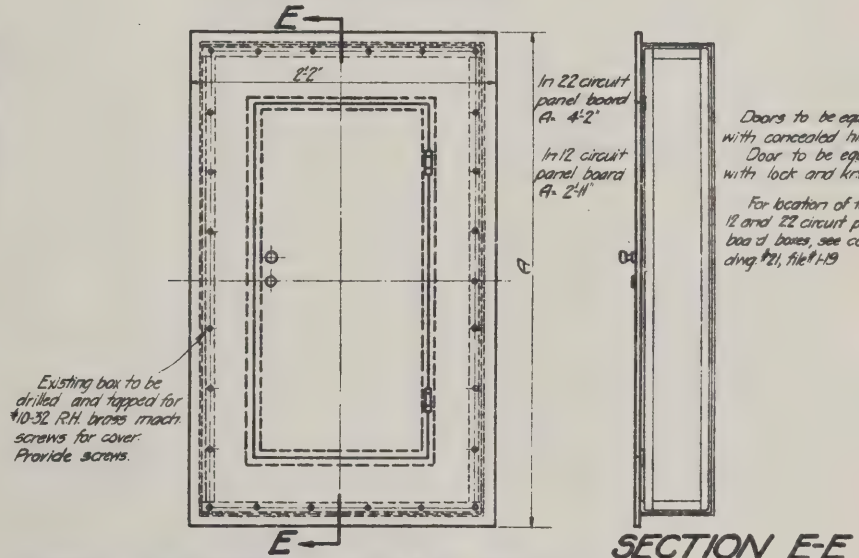
J. N. Dodd
ELECTRICAL ENGINEER

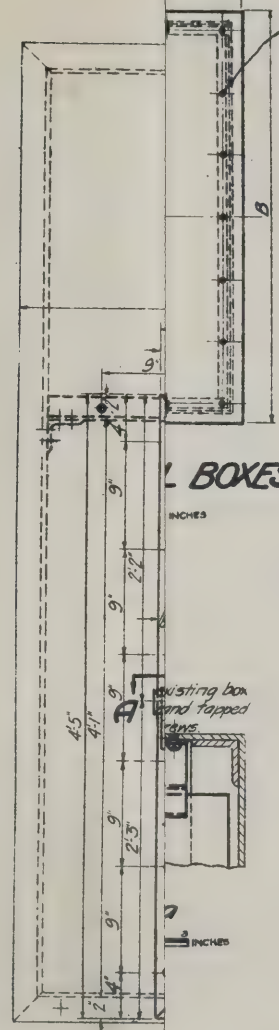
ENGINEER OF DESIGNS

DRAWN BY
CHECKED BY

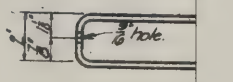
M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

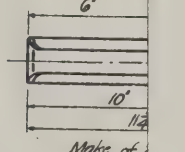

A
2'-2"
4½" 4½" 2⅜" 2⅜" 4½" 4½"
5¼" 5¼" 5⅜" 5⅜" 5¼" 5¼"
2'-11"
A
Existing box to be drilled and tapped for #10-32 R.H. brass mach. screws for cover. Provide screws
Existing boxes to be drilled and tapped for #10-32 R.H. brass mach. screws for cover. Provide screws.
Doors to be equipped with concealed hinges. Small door to be equipped with lock and knob. Large door to be equipped with lock.
SECTION AA
0 3 6 9 12 INCHES
COVER FOR PANEL BOARD BOXES
0 3 6 9 12 INCHES
For Lighting and Heating Circuits.


E
2'-2"
In 22 circuit panel board A- 4'-2"
In 12 circuit panel board A- 2'-11"
A
Existing box to be drilled and tapped for #10-32 R.H. brass mach. screws for cover. Provide screws.
Doors to be equipped with concealed hinges. Door to be equipped with lock and knob.
For location of the 12 and 22 circuit panel board boxes, see contract drawing #21, file #1-19
E
SECTION E-E
COVER FOR PANEL BOARD BOXES
0 3 6 9 12 INCHES
For D.C. Supervisory Circuits.



INSTALLAT
EXISTING
F IN LAND





Make of

MAR

L. B. Stillwell.
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JESEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 28

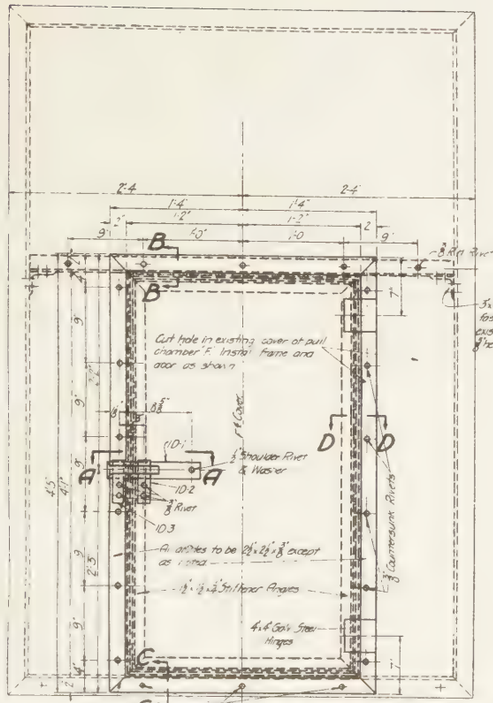
SCALE: 0 1 2 3 4 5 6 INCHES EXCEPT AS SHOWN. DATE MAY 18, 1926.

Ole Singstad
CHIEF ENGINEER

DRAWN BY M.J.S.
CHECKED BY L.B.S.

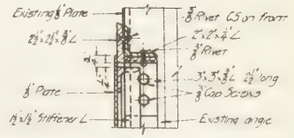
FILE NO. 1-B

M. B. Brown Printing & Binding Co.,
37-41 Chambers Street, N. Y.

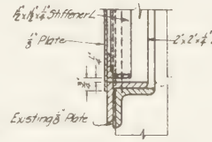

Cut hole in existing cover at pull chamber 'F' Install frame and door as shown
3"x3"Cup angle fastened to existing frame with ⅜" hex cap screws
⅝" Shoulder Rivet & Washer
⅝" Rivet
Counterbore Rivets
All angles to be 2½"x2½"x⅜" except as noted
4'-4" Galv. Steel Hinges
All corners to be Mitered and Riveted
These 3 holes to match in the existing inserts in pull chamber frame

INSTALLATION OF FRAME AND DOOR ON EXISTING STEEL COVER TO PULL CHAMBER F IN LAND VENTILATION BUILDING, N.Y.

INCHES

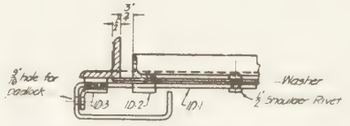


SECTION B-B

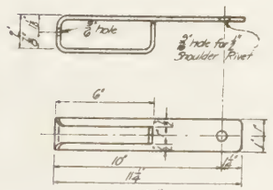


SECTION C-C

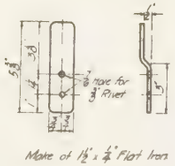
SECTION D-D



SECTION A-A



MARK ID-1



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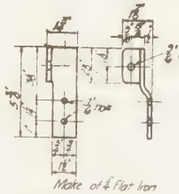
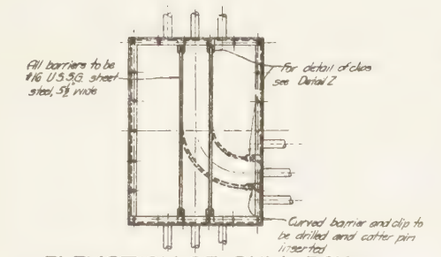
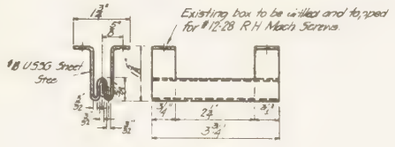


MARK ID-3


All barriers to be #16 U.S.S.G. sheet steel, 5⅛" wide
for detail of clips see Detail Z
Curved barrier and clip to be drilled and cotter pin inserted

ELEVATION OF PULL BOX SHOWING STRAIGHT & CURVED BARRIERS

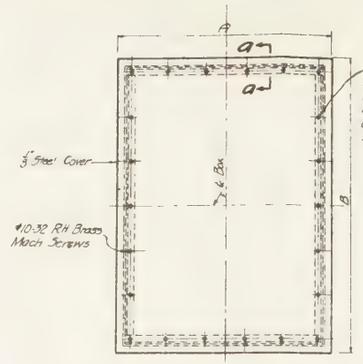
FEET



DETAIL Z

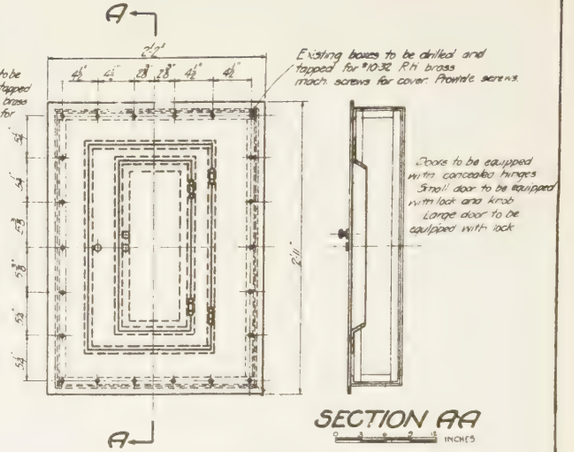
INCHES

Data for Pull Box Covers and Barriers			
Size	No. of Barriers	Type Barrier	Wt./Box
10'-1 3/8"x 6'	3	Straight	1
20'-2 0/8"x 6'	3	Mixed	1
19'-1 3/8"x 6'	0	—	5
29'-1 3/8"x 5'	2	Straight	1
29'-1 3/8"x 6'	4	Straight	1
9'-2 1/8"x 6'	0	—	3
29'-1 3/8"x 6'	0	—	1
19'-2 1/8"x 6'	4	Straight	4
29'-1 3/8"x 20'-6"	5	Straight	1
19'-2 1/8"x 6'	2	Mixed	8
29'-1 4/8"x 6'	9	Straight	1
3'-6" x 3'-1"	2	Straight	1
26'-6 3/8"x 6'	3	—	1


Existing box to be drilled and tapped for #10-32 R.H. Brass mach. screws for cover. Provide screws
⅜" Steel Cover
#10-32 R.H. Brass Mach. Screws

COVER FOR PULL BOXES

INCHES


Existing boxes to be drilled and tapped for #10-32 R.H. brass mach. screws for cover. Provide screws
Doors to be equipped with concealed hinges
Small door to be equipped with lock and knob
Large door to be equipped with lock

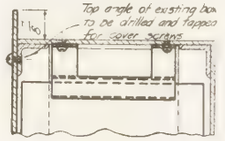
SECTION AA

INCHES

COVER FOR PANEL BOARD BOXES

INCHES

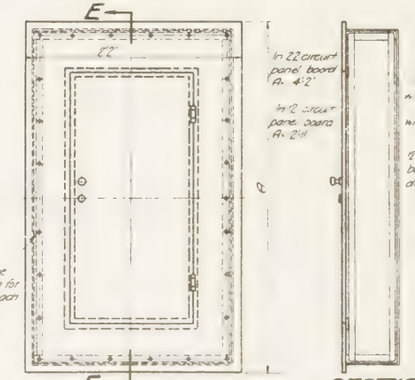
For Lighting and Heating Circuits



SECTION a-a

INCHES

Data for Panel Board Box Covers			
Size of Cover	No. of Ckts.	Type of Cover	No. Req.
2'-2" x 2'-11"	4	Double Doors	10
2'-2" x 2'-11"	6	Double Doors	4
2'-2" x 2'-11"	8	Double Doors	11
2'-2" x 2'-11"	12	Single Door	6
2'-2" x 4'-2"	22	Single Door	6


In 22 circuit panel board A. 4'-2"
In 12 circuit panel board A. 2'-11"
Doors to be equipped with concealed hinges. Door to be equipped with lock and knob
For location of the 12 and 22 circuit panel board boxes, see Contract Drawing #21, File #1-19
Existing box to be drilled and tapped for #10-32 R.H. brass mach. screws for cover. Provide screws

SECTION E-E

COVER FOR PANEL BOARD BOXES

INCHES

For D.C. Supervisory Circuits

TRIM FOR PULL & PANEL BOARD BOXES

L. B. Stillwell
CONSULTING ENGINEER

NEW YORK STATE
BRIDGE & TUNNEL COMMISSION
AND
NEW JERSEY INTERSTATE
BRIDGE & TUNNEL COMMISSION

THE HOLLAND TUNNEL
CONTRACT No. 19
CONTRACT DRAWING No. 28

SCALE: INCHES EXCEPT AS SHOWN

DATE MAY 8, 1926

Ole Singstad
CHIEF ENGINEER

FILE NO. 1-19

DRAWN BY M.B.G.
CHECKED BY A.L.G.

Rafael Guastavino
ENGINEER OF DESIGN

J. R. Stodd
ELECTRICAL ENGINEER

M. B. Brown Printing & Binding Co.,
17-41 Chambers Street, N.Y.

CONTRACT №19

NEW YORK STATE BRIDGE AND TUNNEL COMMISSION

AND

NEW JERSEY INTERSTATE BRIDGE AND TUNNEL COMMISSION

THE HOLLAND TUNNEL

CANVASS OF BIDS RECEIVED JULY 20, 1926

ITEM	CLASSIFICATION	UNIT	FISCHBACH & MOORE INC. AMOUNT	JANDOUS ELECTRIC EQUIPMENT CO. AMOUNT
195	Tunnel lighting	Lump Sum	96 260 00	117 700 00
196	N.Y. entrance plaza & N.J. entrance & exit plaza lighting	"	22 720 00	27 700 00
197	Telephone equipment	"	41 625 00	58 800 00
198 a	Lighting & electric heating, N.Y. land ventilation bldg. & shafts	"	5 230 00	6 900 00
b	" " " " " river " " " "	"	5 500 00	5 300 00
c	" " " " " N.J. land " " " "	"	5 635 00	6 600 00
d	" " " " " river " " " "	"	4 975 00	5 400 00
199 a	Power & control wiring & lighting transformers, N.Y. land vent. bldg. & shafts	"	29 515 00	34 300 00
b	" " " " " " " river " " " "	"	23 100 00	20 600 00
c	" " " " " " " N.J. land " " " "	"	29 010 00	32 400 00
d	" " " " " " " river " " " "	"	22 665 00	20 600 00
200 a	Control switchbds., stor. batteries & concrete floors in control room, N.Y. land vent. bldg.	"	58 215 00	68 600 00
b	" " " " " " " river " "	"	38 775 00	45 600 00
c	" " " " " " " N.J. land " "	"	58 215 00	68 600 00
d	" " " " " " " river " "	"	38 775 00	45 500 00
201	Supervisory system, incl. concrete floor, N.Y. administration bldg.	"	180 780 00	157 400 00
202	Carbon monoxide recorders (four)	"	37 770 00	39 500 00
203	Miscellaneous equipment	"	7 270 00	7 900 00
206	Installing air blast power transformers & 13200 volt & 2300 volt oil switches	"	24 560 00	24 100 00
207	Furnishing & install'g 440 v. oil switches & pot'l & current transf'rs & install'g current transf'rs	"	108 306 00	116 200 00
	TOTALS		818,901.00	909,700.00

ON-FLAGG NGR. CO.	WAGNER ENGR. CO.	ERICKSON ENGR. CO. INC.	LORD ELECTRIC CO.	JOHN W. HOOLEY	J. LIVINGSTON CO.	PEET & POWERS INC.	ENGINEERS ESTIMATE
MOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
140 593 00	105 000 00	175 000 00	117 300 00	118 624 00	145 000 00	156 000 00	107 599 00
25 590 00	25 680 00	40 000 00	31 100 00	31 118 00	36 250 00	32 000 00	33 647 00
68 319 00	80 000 00	44 000 00	57 000 00	91 265 00	72 500 00	94 000 00	55 233 00
5 892 00	6 000 00	10 000 00	5 900 00	7 958 00	8 700 00	9 300 00	5 645 00
6 086 00	5 500 00	7 300 00	5 900 00	9 277 00	10 875 00	9 000 00	4 455 00
5 737 00	6 000 00	10 000 00	5 900 00	6 918 00	7 250 00	10 000 00	4 875 00
6 576 00	5 500 00	7 500 00	5 400 00	10 472 00	8 700 00	8 000 00	4 115 00
46 400 00	40 600 00	45 000 00	48 000 00	77 205 00	40 600 00	58 000 00	40 543 00
34 172 00	26 500 00	40 000 00	31 000 00	45 485 00	29 000 00	34 000 00	20 979 00
46 491 00	40 600 00	45 000 00	21 000 00	75 012 00	38 425 00	54 000 00	39 167 00
31 912 00	27 300 00	40 000 00	40 000 00	44 066 00	26 825 00	33 000 00	19 633 00
61 582 00	80 300 00	80 000 00	95 000 00	93 385 00	99 325 00	93 000 00	53 245 00
41 395 00	60 000 00	60 000 00	65 000 00	61 125 00	65 250 00	63 000 00	32 365 00
61 627 00	80 800 00	80 000 00	95 000 00	93 385 00	99 325 00	93 000 00	53 295 00
44 766 00	55 000 00	60 000 00	66 000 00	61 125 00	65 250 00	64 000 00	32 365 00
169 282 00	215 500 00	155 000 00	249 000 00	154 310 00	270 700 00	283 000 00	153 848 00
40 000 00	43 000 00	20 000 00	31 000 00	51 451 00	58 000 00	58 000 00	21 000 00
8 210 00	8 530 00	8 000 00	11 000 00	10 355 00	12 850 00	12 000 00	9 437 00
29 362 00	10 000 00	6 000 00	70 000 00	47 600 00	46 400 00	53 000 00	18 114 00
131 645 00	145 000 00	140 000 00	167 300 00	168 600 00	181 250 00	175 000 00	121 900 00
1,006,137.00	1,067,310.00	1,073,000.00	1,247,800.00	1,258,736.00	1,322,475.00	1,391,300.00	831,460.00

RECEIVED
NOV 2 1926
A. C. WILLARD
Ans.

UNIVERSITY OF ILLINOIS-URBANA
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